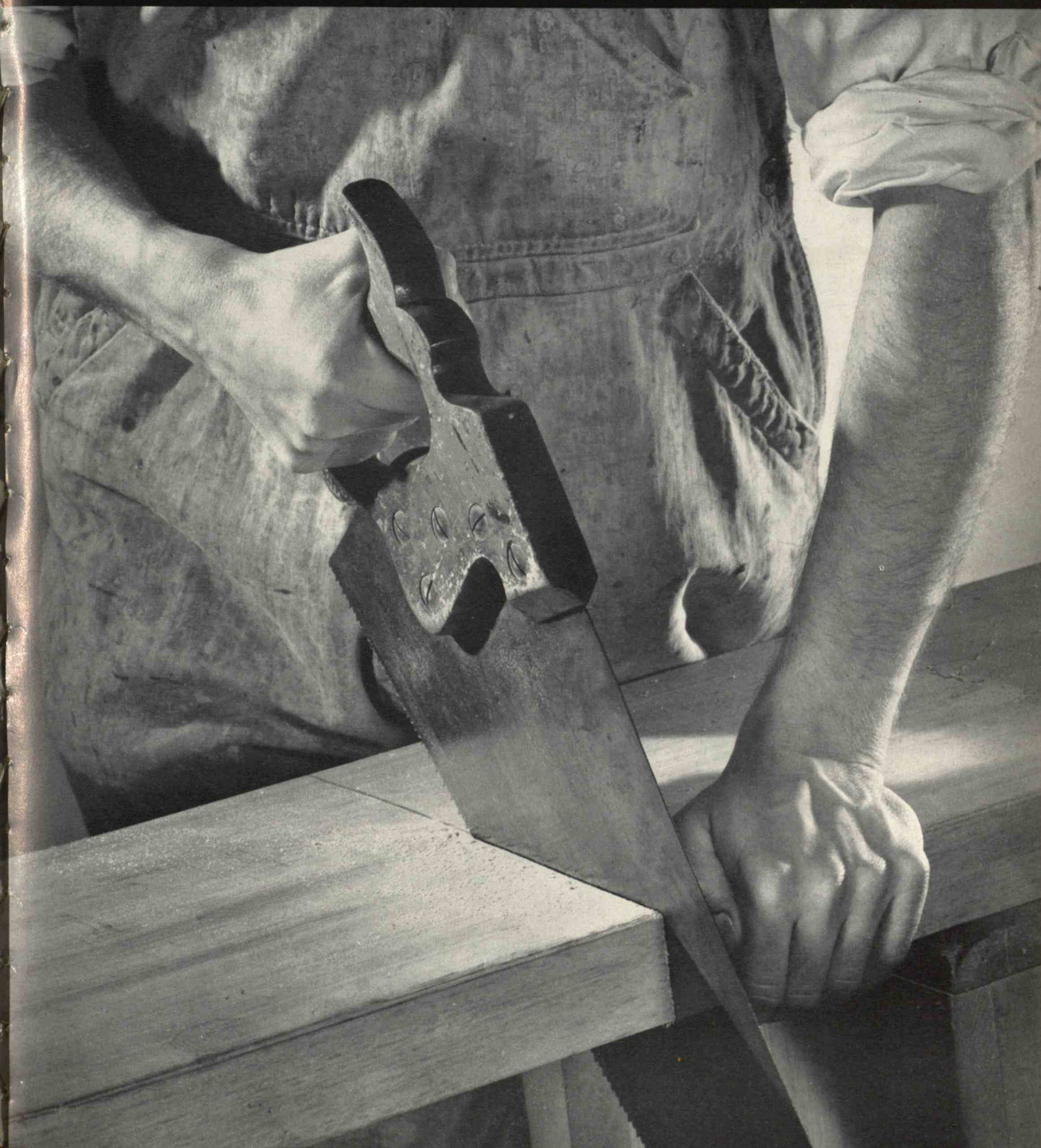


TECHNOLOGY

REVIEW

February 1956



technology review

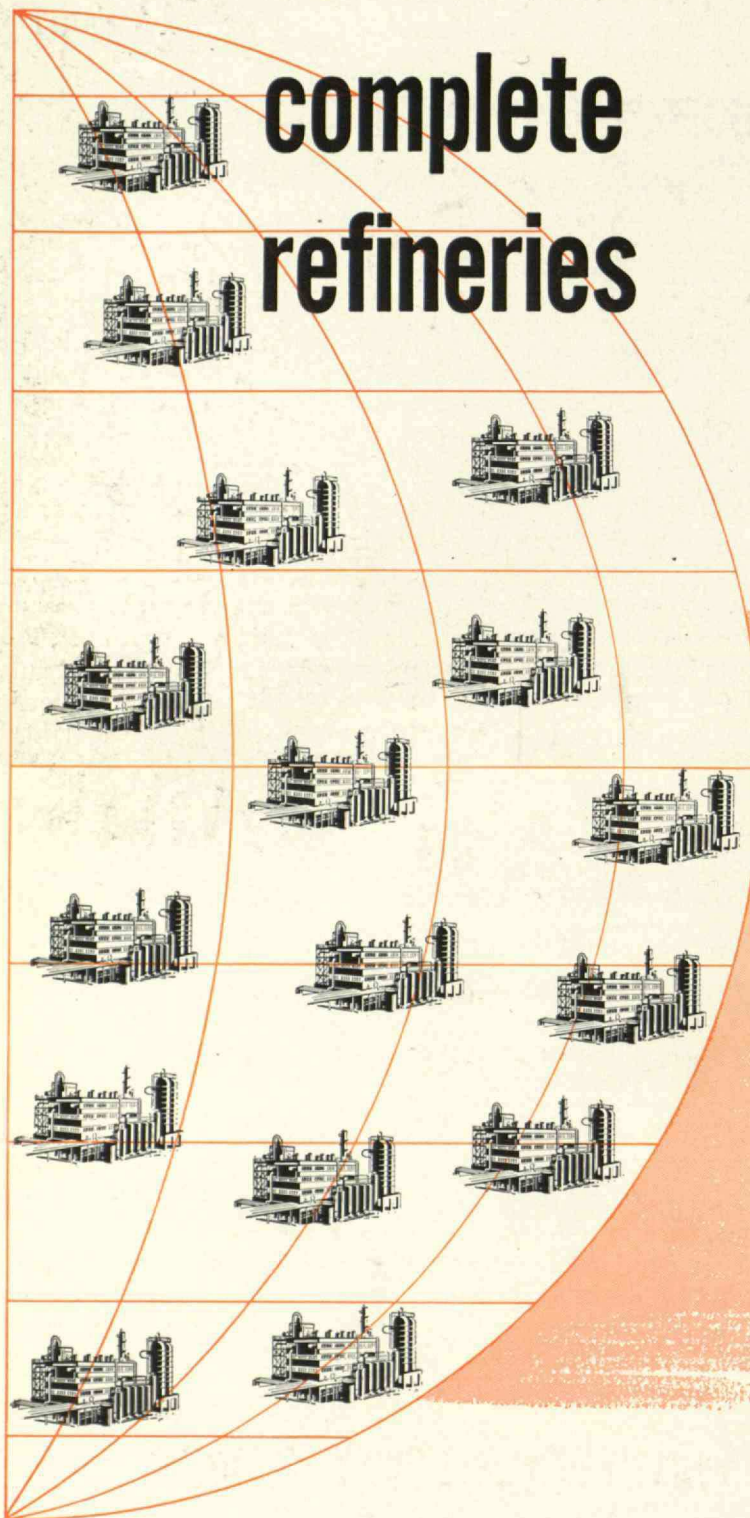
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1945

16

complete refineries



1. Refinery for B. P. M. at Cardon, Venezuela.
2. Refinery for Koppartrans Oljeaktiebolag at Gothenburg, Sweden.
3. Refinery for Venezuela Gulf Refining Company at Puerto La Cruz, Venezuela.
4. Refinery for Societe Generale des Huiles de Petrole at Dunkirk, France.
5. "Portable" refinery for U. S. Navy Department.
6. Lube oil refinery for Cit-Con Oil Corporation at Lake Charles, Louisiana.
7. Refinery for International Refineries Inc. at Wrenshall, Minnesota.
8. Refinery for Vacuum Oil Company Ltd. at Coryton, England.
9. Refinery for Burmah-Shell Oil Company at Bombay, India.
10. Refinery for Standard-Vacuum Oil Company at Bombay, India.
11. Refinery for Standard Oil Company (Indiana) at Mandan, North Dakota.
12. Refinery for Suntime Refining Company at Corpus Christi, Texas.
13. Refinery for Commonwealth Refining Company at Ponce, Puerto Rico.
14. Refinery for Esso Standard Oil Company at Antwerp, Belgium.
15. Refinery for Caltex at Visakhapatnam, India.
16. Refinery for Neste Oy at Turku, Finland.

1955

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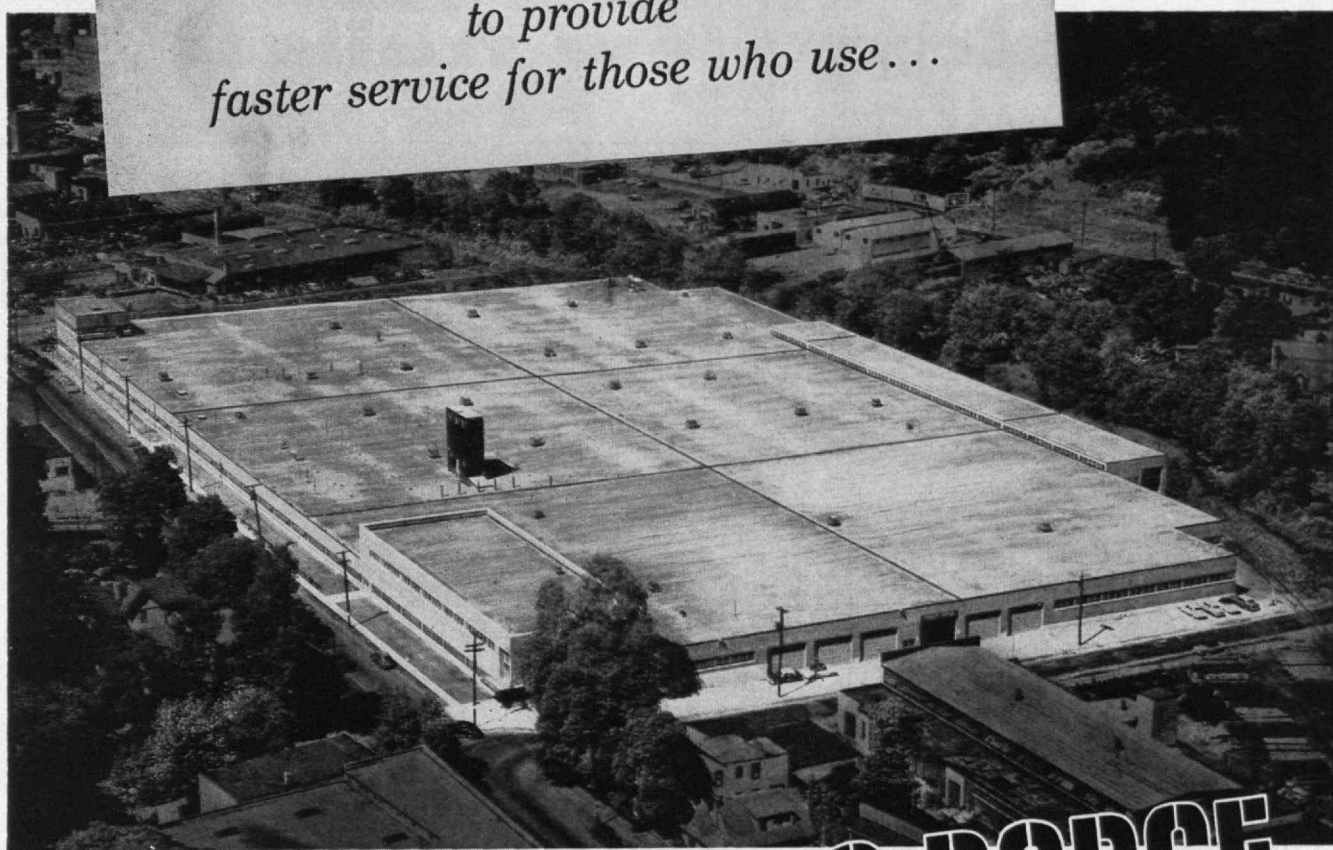
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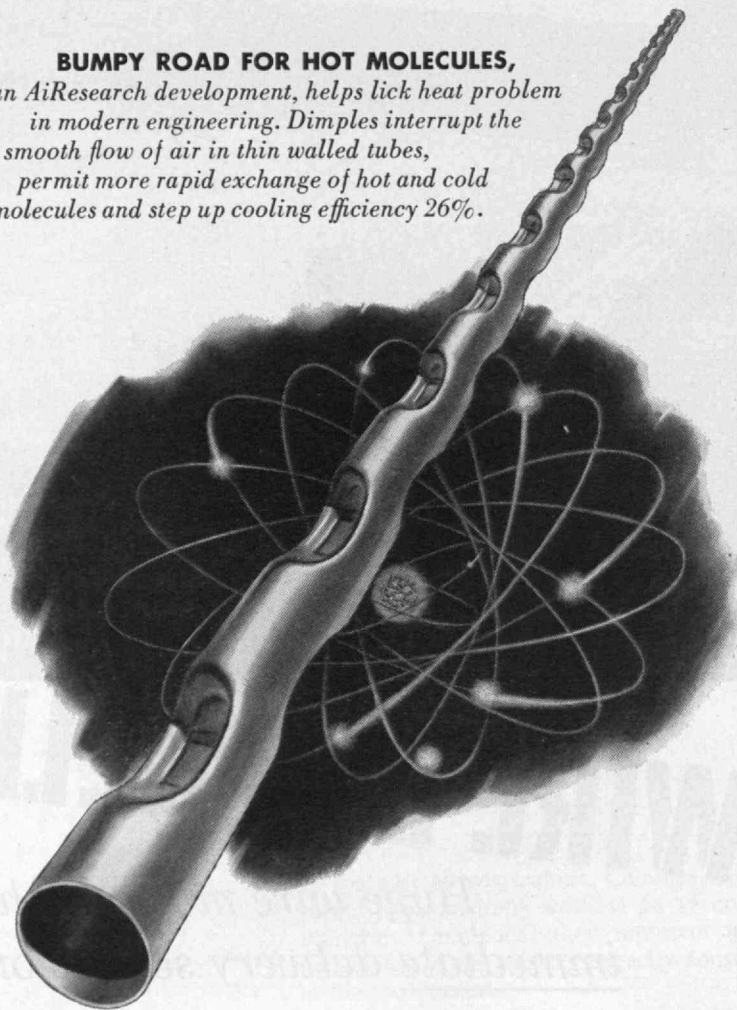
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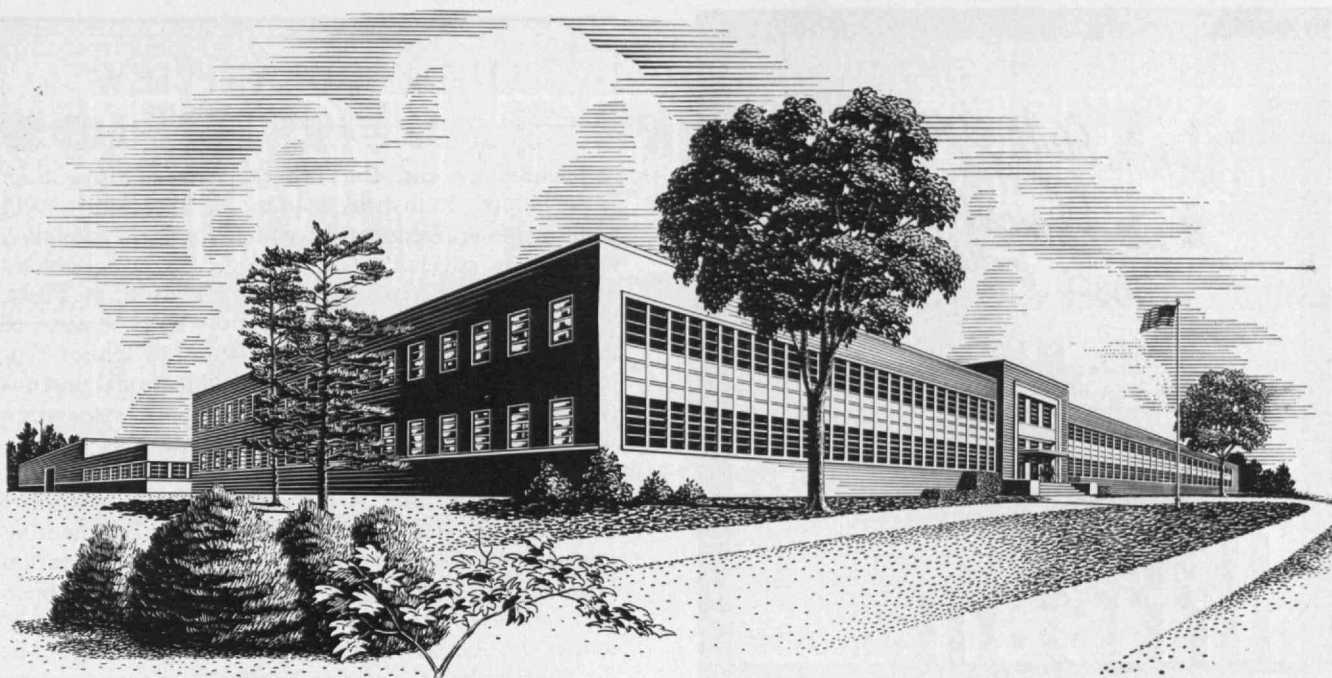
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COMBUSTION ENGINEERING now building NUCLEAR ENGINEERING AND DEVELOPMENT CENTER

On a 530-acre site in Windsor, Connecticut, Combustion Engineering is now building a Nuclear Engineering and Development Center. In addition to the Engineering and Administration Building, shown above, there will be a critical experiment facility for studying the physics and nuclear characteristics of reactor cores, a "hot" laboratory and a fuel element fabrication plant, together with related metallurgical, chemical and physical testing laboratories.

This multi-million dollar project, for which Stone & Webster Engineering Corporation are the architects and engineers, is scheduled for initial operation late this year and completion in early '57. In conjunction with new nuclear facilities recently placed in operation at the Company's Chattanooga, Tenn., plant, the Windsor plant will enable Combustion

**to design, develop and manufacture
complete nuclear power reactor systems**

Heavy components such as reactor vessels, boilers, plugs and shields will be manufactured at Chattanooga. Reactor cores, including fuel elements and control rods, will be produced at Windsor.

The new nuclear building at Chattanooga includes such equipment as a 15,000,000-volt betatron for fast X-raying of thick plate and welds; large precision machine tools capable of handling work up to 20 feet in diameter with accuracies comparable to those required in watchmaking; and cranes to handle loads in excess of 300 tons. A new dock is equipped to handle reactor vessels too large and heavy for rail or highway shipment. By virtue of these facilities, Combustion becomes the *first company in the world* to possess equipment especially designed for the manufacture of heavy reactor components and to be able to ship them by water to virtually all river and coastal ports.

The panel at the right reveals the Company's current activity in the nuclear field. With the new facilities now available or in process, and others recently authorized, Combustion is prepared to achieve the same position of leadership in nuclear power that it has long occupied in the field of conventional power generation.

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B-898

C-E NUCLEAR WORK 1955-56

Contract to design, develop and build complete nuclear reactor system for a submarine. *(This contract made Combustion the country's third major contractor to AEC on the naval reactor development program, and the first to undertake such a contract with its own facilities.)*

Contract to design and build major reactor components for U.S.S. Seawolf.

Contract to design and build major reactor components for large naval surface ship.

Contract to design and build major reactor components for Submarine Advanced Reactor and Submarine Fleet Reactor Systems.

Contract to design and build major reactor components for Shippingport plant to be operated by Duquesne Light Company. *(This will be country's first commercial size nuclear power plant.)*

Contract to design and build major reactor components for Atomic Power Development Associates. *(This fast breeder reactor, to be operated by Detroit Edison Company, is regarded as the most advanced type projected to date for a commercial size power installation.)*

Agreement with AEC for design and evaluation studies of both large and small reactors and of fuel elements and their fabrication.

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THE TABULAR VIEW

Technology and the Liberal Arts.—More than ever before, industrial leaders of the future will require general education which lends perspective, as well as specialized knowledge. In "Technology and the Liberal Arts" (page 187) HENRY B. DU PONT, '23, writes convincingly that one of the best ways of developing future leaders is through closer co-operation between industry and educational institutions. Mr. du Pont's long and intimate association with industrial and educational institutions lends a special force to his message. Mr. du Pont studied at Yale University and is a member of the Institute's Class of 1923. He was employed in the Engineering Department of the General Motors Corporation between 1924 and 1927, and since 1927 has been with the E. I. du Pont de Nemours Company of which he became a vice-president in 1939. Mr. du Pont is director of the North American Aviation Company, Wilmington Trust Company, and General Motors Corporation. He is president of the Alexis I. du Pont School in Wilmington.

Dollars from Wastes.—Growth of the nation's population, expansion of its urban sections, limited useful agricultural areas, and increasing demands for products made from dwindling natural re-

(Concluded on page 178)



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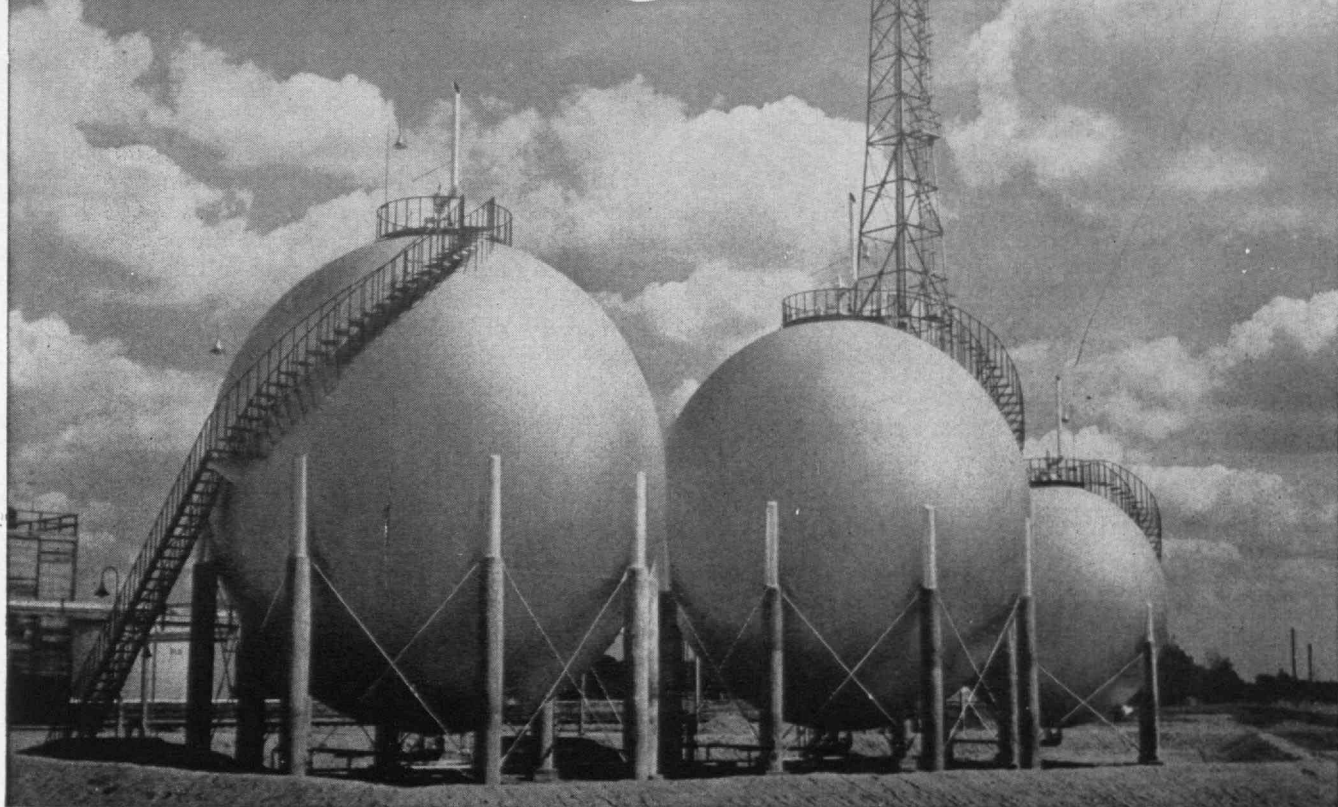
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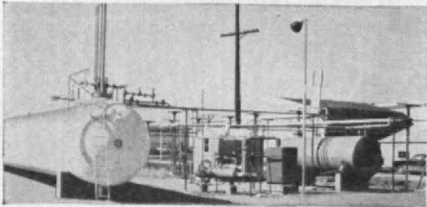
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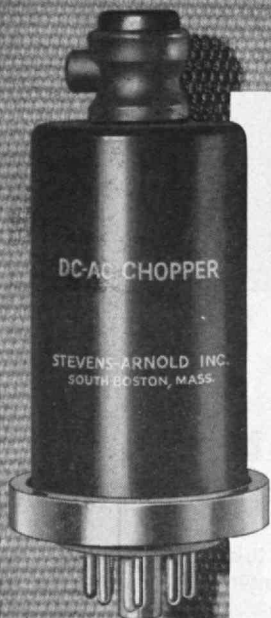
THE TABULAR VIEW

(Concluded from page 176)

sources, all combine to pose a serious problem of conservation. One means of meeting expanding raw material requirements is to make more effective and efficient use of food and agricultural wastes, and "Dollars from Wastes" (page 191) by HARRY W. VON LOESECKE, urges the adoption of such a program. After graduation from Harvard University, Mr. von Loesecke became research chemist for the General Electric Company, the American Protein Corporation, and the United Fruit Company. He has also been senior chemist, industrial specialist, and technical adviser in a variety of projects related to agriculture and the food industry. Mr. von Loesecke is a fellow of the American Public Health Association, and member of the American Chemical Society.

American Engineering Education Abroad.—

What problems confront the engineering professor who applies American methods in foreign lands where textbooks and laboratory facilities are less commonplace than here? One answer to this problem is provided in "Engineering Education at the American University of Beirut" (page 194) by EDWARD S. HOPE, '26 who has been professor of civil engineering in that university since 1951. Professor Hope received the B.A. degree from Morehouse College in 1923, the S.B. and S.M. degrees from M.I.T. in 1926 and 1927, respectively, and the Ed.D. degree from Columbia University in 1942. Following graduation from M.I.T., Dr. Hope spent a year as highway engineer for the State of New York, three years as hydraulic engineer in Rio de Janeiro, Brazil, and 12 years as superintendent of Buildings and Grounds, at Howard University. During his term in the Navy, between 1944 and 1946, he became director of instruction, C.E.C. Navy Pacific University with rank of Lieutenant Commander.



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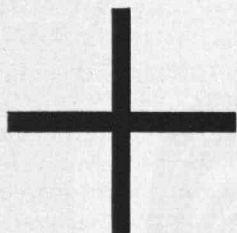
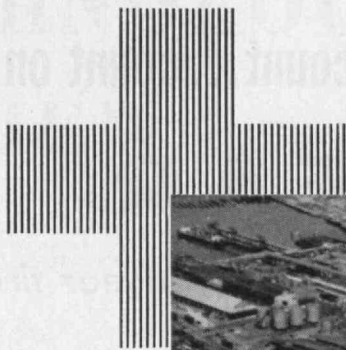
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Broad perspective, as well as specialized knowledge, is a requisite of leaders and can probably be best developed through closer co-operation between industry and our institutions of higher learning

DOLLARS FROM WASTES BY HARRY W. VON LOESECKE 191

As population increases and our natural resources decline, we must look to wastes from food and agricultural products to supply an increasing amount of the raw materials needed for manufacturing operations

ENGINEERING EDUCATION AT THE AMERICAN UNIVERSITY OF BEIRUT BY EDWARD S. HOPE 194

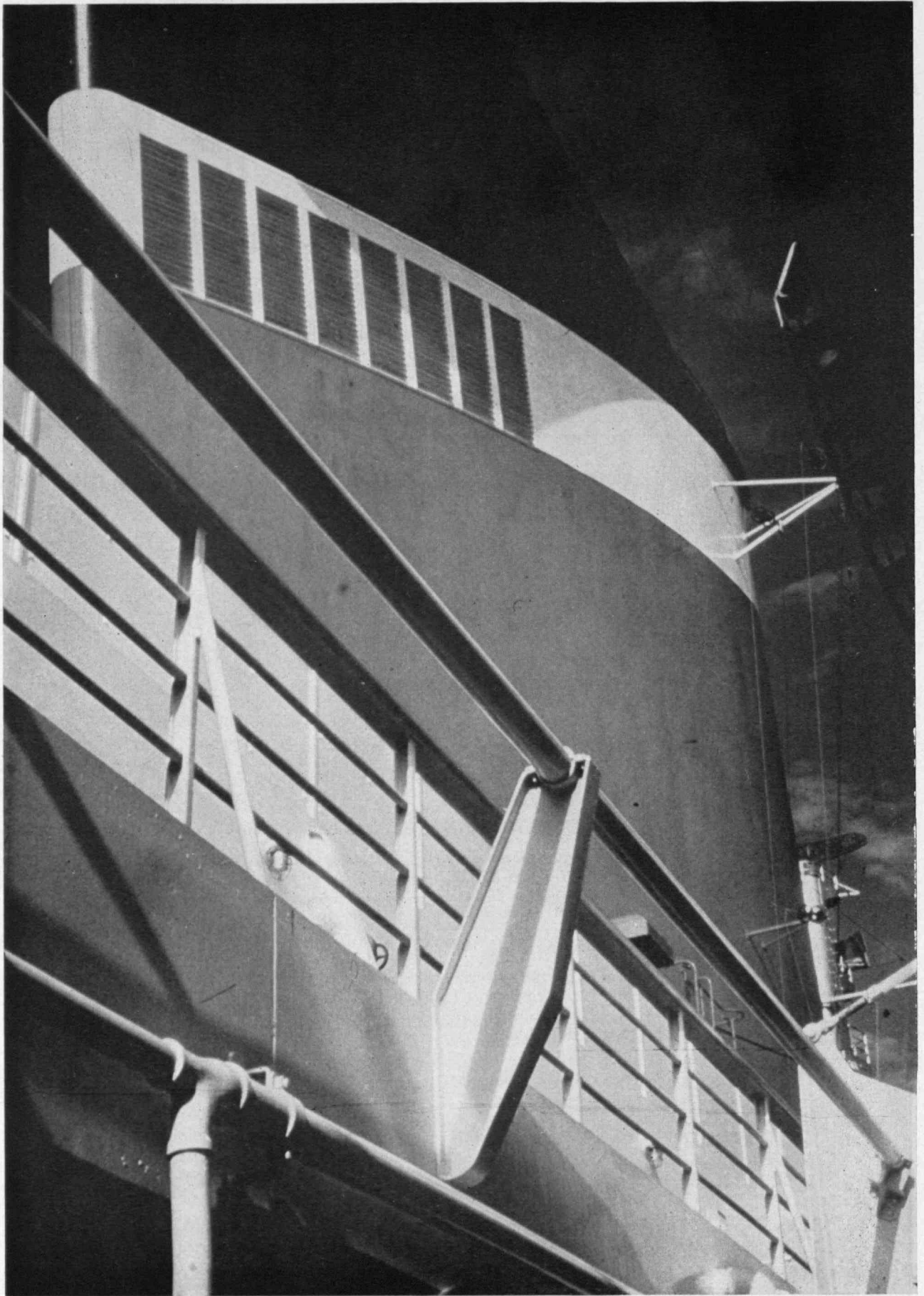
Transplanted in an environment quite different from that of the United States, American methods of engineering education, when suitably modified and sagaciously administered, aid the Middle East to use technology

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Elliott B. Roberts, '21

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THE TECHNOLOGY REVIEW

Vol. 58, No. 4



February, 1956

The Trend of Affairs

New Wine

THE flavors of foods and beverages, although everyday commonplaces, are actually dark mysteries. They cannot be gauged by objective scientific measurement, but only by the subjective judgments of the gourmet. As told in the pages of *The Review** for December, 1950, flavor is a mixed experience including taste, odor, tactile, and other sensations, amenable to no objective chemical or physical test, but measurable only empirically. In the food and beverage industries flavor is judged by individual experts, or by trained juries, or by broad consumer tests with numerous participants. When multiple judgments are obtained, statistical procedures are employed to cancel out dullness of the senses, inattention, prejudice, and such human vagaries.

But aiming toward ultimate measurement of flavor in objective terms, the appalling task has now been bravely essayed of analyzing the flavor of one beverage in terms of constituents of known chemical composition. The beverage being so studied is one of venerable standing, known to all races—ancient and modern: wine. The food technologists who have undertaken to dissect the flavor of wine set out to answer questions such as these: What constituents of known chemical composition are responsible for the flavor? What is the lowest concentration of each flavor constituent apparent to the consumer (called “threshold value”)? What differences in concentration are apparent? What effect does each flavor constituent have upon threshold value and perceptible concentration differences of every other one?

The elements of wine flavor were concluded to be 14 in number: alcohol, two sugars, glycerol, ethyl

acetate, acetaldehyde, tannin, six organic acids, and sulfur dioxide. Threshold concentrations were found to vary widely. Thus the sugar dextrose was apparent to the taste only when present in concentrations of at least about one-half per cent; but acetaldehyde was tasted in concentration as low as .00015 per cent.

Perceptible concentration differences also varied widely for the various flavor elements; and for each varied according to the absolute concentration. Thus increments of about 1 per cent in alcohol concentrates could be detected by tasters in a dilute solution containing about 4 per cent alcohol. When about 16 per cent alcohol was present, increments could not be detected unless they were greater than 2 per cent.

As to interrelationships, alcohol was found to enhance the sweetness produced by sugars; thus 7 per cent sugar dissolved in 20 per cent alcohol was as sweet as 10 per cent sugar in pure water. Sugars dulled perception of differences in alcohol content, but acids diminished this effect of sugar in dulling perception to alcohol. Alcohol and acid both dulled perception of glycerol. Alcohol dulled the perception of acid; sugar did not affect the perception of acid, but did mask the flavor of tannin.

Now it remains to apply these interesting findings practically, so that perhaps certain major flavor characteristics of wines may be measured by quantitative chemical determination of certain of the 14 known major flavor constituents.

One incidental observation of this study is striking, especially since wine is dominated by the mumbo jumbo of the expert perhaps more than any other food or beverage. In extensive trials with the flavor elements of wine in pure form, it was found that experienced winetasters were no more perceptive of thresholds or concentration differences than inexperienced participants.

* Frederic W. Nordsiek, “All Experience Is of Change,” *The Technology Review*, 53:87.



M.I.T. Photo

Science, the Mighty Multiplier

A DISTINGUISHED group of 1,500 Technology Alumni and other leaders in industry, education, and finance attended a dinner given by the M.I.T. Corporation at the Waldorf-Astoria Hotel in New York on Wednesday, January 4. The purpose of the meeting was twofold. It was the occasion of a tribute to Karl T. Compton, President of M.I.T. from 1930 to 1949, and chairman of the M.I.T. Corporation from 1949 until his death in June, 1954. It was also the occasion for the Institute's Corporation to report on the achievement of certain goals, and to express its appreciation for the magnificent support which the Institute has received in achieving new means for meeting its increasing needs and responsibilities.

In making his report on recent progress at M.I.T., James R. Killian, Jr., '26, President, announced that

a School for Advanced Study had been established and will be under the direction of Martin J. Buerger, '24, chairman of the Faculty. The new School (opening in September, 1956) has been organized to give formal recognition to the importance of postdoctoral studies in advancing science and technology.

Tribute to the quarter century of leadership which Dr. Compton gave to M.I.T. was voiced by Robert E. Wilson '16, chairman of the Board of the Standard Oil Company of Indiana.

The third speaker was General Robert Cutler, chairman of the Board of Old Colony Trust Company, and consultant to the National Security Council, who spoke on the role of the National Security Council.

There is opportunity for only a brief news announcement in this issue of *The Review* and the illustration of distinguished guests seated on the dais. The March issue will contain a detailed report.

Blueprint to Milling Operations

IN the new manufacturing methods that are rapidly gaining acceptance, automatic machines and techniques capable of carrying out complicated processes without human intervention play a particularly significant role. One form of automatic machine, capable of producing complicated milled forms and whose operations are controlled by means of paper or magnetic tape input rather than by means of the usual model to be traced, gives promise of making a significant contribution to the evolution in automatic methods.

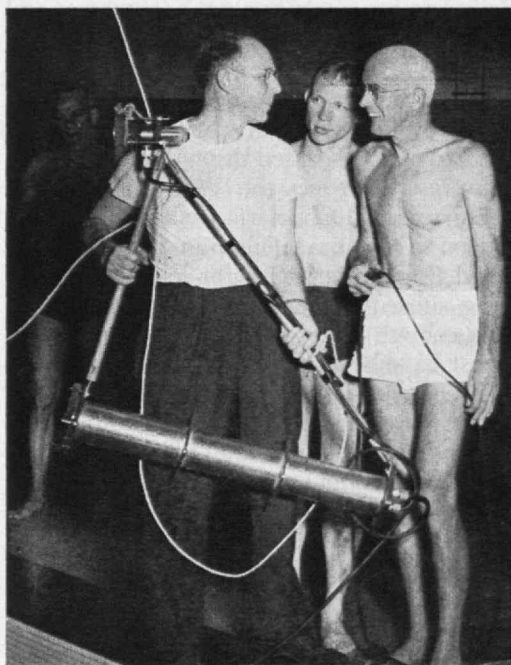
An automatic contour milling machine, having a cutting tool whose position is controlled by digital information from a punched record, rather than dimensions of a model, is a long step forward in automation. The time and effort needed to produce the tape by which the machine is controlled are considerable, however, and sometimes place a limit on the size of production runs which may be practical for automatic machine operation. More than that, the preparation of a suitable control tape may require knowledge of

programming of a digital computer, which is not always possessed by those who would make most effective use of automatic machine tools. The production of the machine tool program involves a painstaking step-by-step analysis of machine operations, a determination of how the problem may best be treated by the machines, and the preparation of a set of instructions which, when obeyed by the machine, will effect the desired result. Many of the program operations are similar to those required to set up a problem on a large computing machine, and there is good reason to believe that such computing machines, which are coming to be more commonplace, could be used to prepare programs for automatic machines.

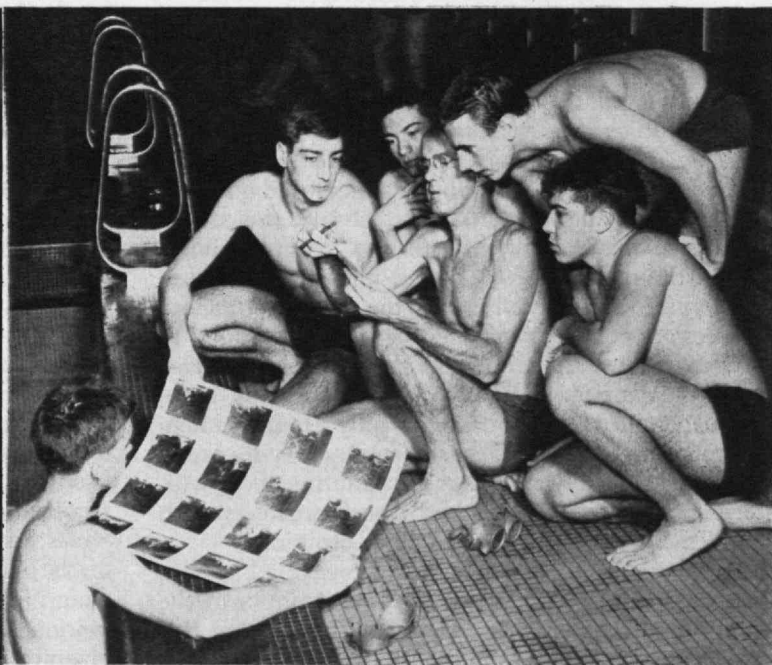
To be completely effective, any system for employing a digital computer in machine tool operations, must be easily used by persons familiar with machine tools and with metal-cutting processes, and should not require knowledge of, or extensive training in, digital computer operations. The nature of the calculations which may be involved can often be anticipated, and the computer can be coded once and for all, to handle calculations as they arise. The digital

computer can even be coded to determine what the needed calculations are.

Recent work in the Institute's Digital Computer Laboratory under the direction of Arnold Siegel, a research staff member of the Division of Industrial Coöperation, has been directed toward the development of a technique for adapting digital computers to the programming of automatic numerically controlled machine tools. The purpose of this research is to develop methods by which designers familiar with machine tool operations can specify the necessary cutting operations in terms of points, lines, circles, or similar information that can be derived directly from engineering drawings of the part to be milled. The machine operator or designer can then specify cutting speeds and the direction of the cutting tool in three dimensions in terms of design data. Once this information is available, digital computers can convert it into the necessary punched-tape code for controlling operations of the milling machine numerical control system.



(Left) Professor Harold E. Edgerton, '27, of the Department of Electrical Engineering, and Gordon H. Smith, swimming coach, discuss the underwater camera used to study M.I.T.



M.I.T. Photos

Electronics Aids Tech Swimmers

PHOTOGRAPHY, aided by electronic flash equipment, is being employed to help train students at M.I.T. who go out for swimming. Gordon H. Smith, swimming coach, finds the technique especially useful in developing, in his swimmers, the ability to make turns properly. A series of still photographs are taken which show the position of the swimmer as he reverses his direction at the edge of the pool.

Coach Smith operates the underwater camera from the surface, timing the moment of exposure by a manually operated push button. The camera uses 100-foot lengths of 35 millimeter film, and 800 separate exposures can be made from a single loading of the camera. Power for winding the film and for synchro-

Of course, the user of the automatic machine must be able to present his problem to the computer for solution. This is accomplished by providing him with an input "language" which can be mastered in a few minutes. A simple and readily learned vocabulary has been devised by means of which the designer establishes the required cutting operations. The vocabulary is one which it is possible to implement on the Whirlwind I computer or other high-speed digital computer. The required terminology is based upon plain English and simple symbols which are, in turn, related to the dimensions and cutting operations which the machine tool must effect. The input language is primarily designed to specify the required milling operations in terms of the data which would be given in the majority of typical engineering drawings and blueprints.

It is considered that such a program will be very useful to the M.I.T. Servomechanisms Laboratory and will represent a forward step in the application of digital computers to automatic control processes.

swimmers. At the right, Coach Smith and some of his swimming enthusiasts study the results of underwater photographs showing the students in action in the Alumni Pool.

nized electronic flash is obtained from the usual 115 volt, 60-cycle circuit. The equipment is designed so that a complete cycle of operation requires only about five seconds.

The camera used for this purpose is one of the underwater types developed by Harold E. Edgerton, '27, Professor of Electrical Measurements at the Institute. Several of these cameras were used on expeditions of the National Geographic Society, and particularly in cruises of the *Calypso* under the command of Commandant Jacques Y. Cousteau. Recently photographs with such equipment were made some 14,000 feet below the surface at the deepest area in the Mediterranean Sea, fairly near Cape Matapan in Greece. No M.I.T. swimmers were found at this depth, however.

Microbe Measurements

THE biological sciences in general have lagged far behind the chemical and physical sciences in quantification techniques—or as scientists are apt to say with reckless disregard of etymology—“quantitation” techniques. Thus, compare quantitative analytical chemistry with quantitative bacteriology.

Highly exact methods for quantitative chemical analysis, both gravimetric and volumetric procedures, have long been known. In recent times even more precise methods, capable of measuring increasingly minute concentrations, have come through paper chromatography, electrophoresis, infrared spectrophotometry, and ultracentrifugation.

But only rough methods have been available for a basic procedure in quantitative bacteriology, the determination of how many bacteria, yeasts, molds, or other micro-organisms are present in a sample. Such procedures are required in food technology, the fermentation industries, the sanitary control of drinking water supplies, and clinical medicine, where it is frequently important to know not only the types of micro-organisms present, but also the concentration in which they occur. The classic method for determining microbial concentrations, called “plate counting,” is rather crude, and has remained essentially unchanged since the days of Pasteur. The plate count involves essentially the mixing of a measured quantity of the unknown into a sterile nutrient jelly in a sterile glass dish, then holding this dish in a warm incubator several days, thus allowing each microbe present to develop into a colony visible to the naked eye. These colonies are counted, and their number considered to be equivalent to the number of micro-organisms present in the sample. The procedure is laborious, slow, and inaccurate. It is applicable to only a limited range of bacterial concentrations; substances heavily laden with bacteria may be counted by diluting them with sterile water, but the method is quite useless with samples of very low bacterial concentrations.

There are also direct methods for counting bacteria, essentially the spreading of a known quantity of the sample on a known area of glass slide, staining this preparation so that the microbes become visible, then counting representative fields under a microscope calibrated so that the area of the slide covered by each field seen through the ocular is known. Such methods are limited to fluids having high bacterial levels, such as raw milk, and have the great disadvantage that they do not distinguish living micro-organisms from dead ones.

Crudest of all methods for gauging bacterial concentration are indirect estimates based on some effect produced by the micro-organisms. Thus in the sanitary analysis of drinking water, samples are customarily added to sterile nutrient broth containing lactose. Generation of gas from this brew is considered presumptive evidence of fecal bacteria; and the quantity of gas, the speed with which it appears, and the amount of the sample required for gas production are interpreted as measures of the concentration of fecal bacteria present.

But quantitative bacteriology has now taken a significant stride forward with development of a device

generally known as the “membrane filter.” These appear to be paper discs about one and three-quarters inches in diameter, but actually are made of cellulose esters and, quite different from paper, have pores measuring less than one micron in diameter. Hence these filters retain most common bacteria, yeasts, and other micro-organisms, which generally have diameters somewhat greater than one micron. But the pores of the membrane filter are numerous, numbering over 50,000,000 per square centimeter; hence liquids and gases pass through them freely.

Membrane filters have today gained wide use in quantitative bacteriology of liquids or gases. The unknown is passed through a sterile filter; all of the microbes present are caught on the surface of the disc. It may then be immersed in a dye which stains the micro-organisms so that they can be counted directly under the microscope. Or it can be saturated with a nutrient fluid and incubated, whereupon the microbes grow into colonies that may be counted under low magnification.

The membrane filter method of counting bacteria has been found to be quicker, more convenient, and more accurate than the conventional plate-counting method. It is applicable to gases; the standard plate count is not. The membrane filter may be applied to samples with very low bacterial content, as any volume of unknown may be passed through the filter and all microbes present are caught. When laboratories are not readily accessible, bacteria from samples may be collected on a membrane filter in the field, and the filter held in a preservative for long periods of time awaiting subsequent examination.

Filters fine enough to catch bacteria are not new, but in the past have been limited to expensive, cumbersome, slow devices such as ceramic cylinders. Such filters were used mainly to sterilize fluids without exposure to heat. The membrane filter is equally useful in such applications. It is now used for the sterilization by filtration of pharmaceutical products, wines, and beers. Still other biological applications of the membrane filter are in removal of pyrogens* from injection solutions, and in zoological studies of marine micro-organisms. This filter is also used for chemical studies such as the separation of insoluble matter from water, collection of small colloidal particles and air-borne dusts, and assays of acid mists, metal fumes, and smokes. Apparently chemistry, as well as biology, has acquired a useful new tool in the membrane filter.

Exercise Symposium

THE importance of exercise to bodily health, a subject of increasing personal interest and intensified professional study, was discussed at the Institute on January 10, in a special symposium for doctors, physical education directors, and athletic officers of New England colleges.

The symposium, entitled “The Physiological Effects of Exercise vs. Inactivity,” was sponsored by the Coaches’ Association and the Medical Department of M.I.T., and was held in the Institute’s Kresge Auditorium.

* See “Fever Makers,” *The Technology Review*, 47:357 (April, 1945).

Technology and the Liberal Arts

Closer Co-operation between Industry and Education

Seen as Best Way of Developing Leaders Possessing

Perspective as Well as Specialized Knowledge

By HENRY B. DU PONT

THE other day, I ran across a statement someone had made which was represented to be the Communist party line on the relationship of industry to education. I have been in industry for many years and have had a hand in education for some time as a college and school trustee, so I was interested immediately and will pass this comment on to you. It was stated that the American educational system and American industrial institutions are so closely allied that they are really parts of the same thing; namely, of what is sometimes called the "economy of capital." The American university, it is charged, actually has a vested interest in the economy and is, therefore, likely to favor its successful continuation! It struck me as somewhat odd that a condition which the Communists believe to be such a weakness can be regarded here as one of great strength!

There should be no argument over the community of interest between education and industry, for their mutual interdependence is quite obvious. Both are essential parts of the American economic system. Each prospers in proportion to the health of the economic order, and each has an enormous stake in the well-being of the other.

Whatever construction the Communists or others might put on this common interest, there can be little doubt that the results, as measured in terms of public benefits, have been remarkable. We have, in the United States, an educational system that is second to none in the world. We have an industrial establishment that has learned to perform technical and production miracles. And each has been able to do something that no educational system and no industrial system has ever done before in world history — it has brought its product, whether it be a diploma or a deepfreeze, within the reach of practically every family.

This is a noble objective and the degree of achievement has been notable. Each of us, I think, can be proud of this accomplishment and proud of his own contribution. It shows what can be done under a democracy through the co-ordination of our resources, both human and physical.

Our success in meeting jointly the needs of this mass market, in education and in consumer goods, results from the fact that we have created, between us, a great new force, a force which has given new meaning and new dimensions to the multiplication table. Where one man working one hour once produced

five bushels, or pounds, or dozens, this new force now multiplies that hour's output to 10 or 15 or 20. It is a force bringing together machinery and equipment, skills and techniques, men, money, and methods. It is one of the most powerful forces in the world today, a force that transforms men into giants, deserts into gardens, and poverty into wealth. It is the force we call technology.

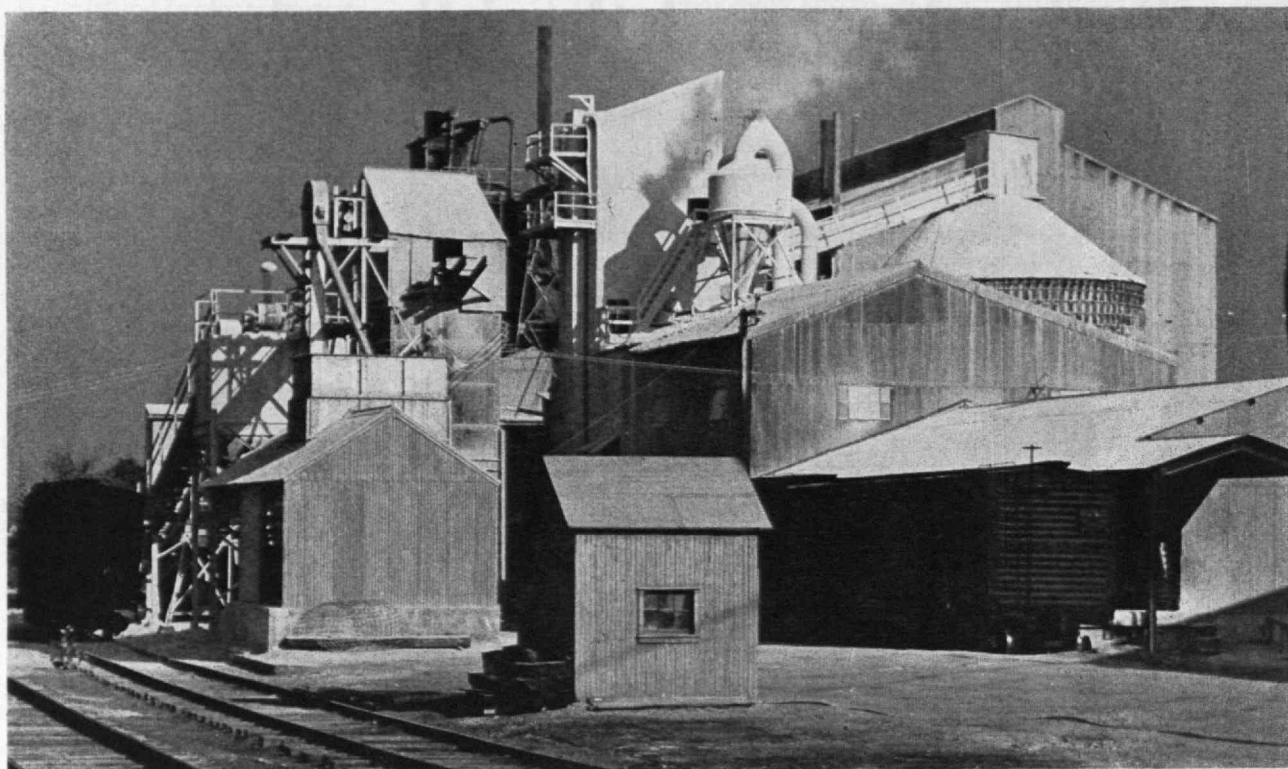
Technology actually begins and derives its greatest strength in the universities, for its most dynamic fuel is the flow of human initiative and human imagination shaped and developed in the careful training of human minds. And technology becomes reality in American industry when the diverse components of money, man power, and management are brought together and the great force is harnessed to the needs of humanity.

The leverage of our technology has brought benefits to everyone regardless of his profession. Its effect upon our daily lives in terms of conveniences, comforts, and security is so taken for granted that we become aware of it only when, in some crisis or emergency, we are temporarily deprived, as when the oil burner breaks down on a cold night or when the hurricanes that used to stay in Florida disrupt our communication lines.

Other effects of technology upon the social, political, and economic patterns of life everywhere have been profound, more so than many yet realize. It is the most significant factor in the rise and fall of nations. And nowhere has its influence been felt more importantly than in the halls of learning.

Two great revolutions have taken place in the field of education in the last half century — one cultural and one social. Each has resulted from the impact of expanding technology and industrial advancement.

The first great change has been the transformation of the American college from a liberal arts sanctuary to one in which technical training in engineering and the physical sciences have come to have so important a place. In 1900, out of an enrollment of approximately 225,000 college students, something less than 11,000 were being trained in technical fields, or about 5 per cent. Today, more than 15 per cent of all college students are in engineering alone, with a very large number additionally in the various basic sciences. This upswing is reflected further in substantial expenditures in the interest of providing technical training by American universities in the past 50



Lime kilns, photographed by Aaron G. Fryer from Black Star, are expressive of America's technology.

TECHNOLOGY AND

years. It is a far different situation than that which prevailed in the earliest days of American education, when more than half of all college graduates were trained for the ministry.

The second great change to be observed concerns the greatly enlarged percentage of the population which attends college. In 1900, about one boy in 30 went to college. Today, it is one boy or girl out of three, and the probabilities are that this ratio will increase. We are undergoing the greatest mass educational program in history and on a scale which, by standards set in other parts of the world, is fantastic. For example, Communists everywhere have made much of the state of the American Negro. Despite the conditions which are so often alleged, there were more Negro students graduated from American colleges this year than there were graduates of all kinds from colleges in Great Britain — from a population of 15,000,000 American Negroes and 50,000,000 Britons. We had as many college students in 1950 as we had high school students in 1920.

I think it is safe to say that we are now reaching the point where no boy or girl of adequate intelligence who is willing to spend the time and effort need lack for a college education.

As we study the first of the two great changes in education, we see that the effect of technology on the curricula and the character of our institutions of higher learning have been enormous and far-reaching. I think it is probably true that, in recent years, this change resulted in an apparent overemphasis on technical education. There was a time, perhaps it is still with us, when those in the field of the liberal arts and the humanities saw perils in the rapid development of the technical schools. They were some-

what awed by the large funds which were poured into the universities for physical plant, scholarships, and budget requirements of the engineering and scientific facilities, particularly when it appeared that this was done at the expense of the liberal arts side of the campus. This was quite a natural feeling, but I think we have, by now, come to realize that there is actually no basis for conflict; that each branch of education — technical and cultural — depends in an important way upon the other.

It is, of course, ridiculous to assume that there should be any real incompatibility between technology or industrial development and the scholarly pursuit of learning. The growth of the American university system has paralleled our industrial growth. In addition, much of our cultural development, particularly that which brought cultural opportunities to millions of people, has come through endowments by men who shared the rewards of industrial enterprise with the general public. Art galleries, libraries, museums, historic restorations, public parks and gardens, and many other such institutions offer testimony today to the benefactions of men who were successful in the business and industrial field. Without enterprise and its successful operation, there would obviously have been no rewards to share.

I think it can be said that, as patrons of the arts, American business and American businessmen have made contributions that might have been impressive to Lorenzo the Magnificent. For this patronage did not stop with gifts and bequests for artistic purposes; more importantly it represents the creation of a society which has leisure to enjoy a cultural heritage.

If the arts, the social sciences, and the humanities were ever in danger of being de-emphasized, the

critical period has passed. In my opinion, the liberal arts are on the threshold of their most useful period of expression, for our need today is for education in its broadest sense. That is the area in which it should become clear that the liberal arts, which form the basis of all education, have lost none of their former luster.

Historically, it is to the universities that we look for the training of succeeding generations. The task before all of us today in planning for the future is particularly difficult, and the university's part is especially important at this time. Our society demands that the universities supply us not only the trained technicians and the gifted specialists as such, but those with a potential for broad leadership. The greatest need, now more than ever before, is for leaders — leaders with intellectual honesty, with objectivity, and with purpose.

These are fast-moving and often confusing times. The sights and sounds that confront us are frequently disturbing. The new leaders that must emerge to face the challenge of this strange new world will have problems much different from those of their fathers' and grandfathers' time. Leadership is never an easy role, of course, but the kind we need today is vastly different from that required in earlier days. It has not been so long ago, for example, that the very fact of having an education, by its rarity, was some qualification for leadership. In some parts of the world even today, some degree of eminence is held simply by those who are able to read and write.

But what about leadership in a country where more and more of us are — at least nominally — the proud possessors of a higher education? What new responsibility must be fulfilled?

The new leadership calls, it seems to me, more than anything else for perspective. Perspective is what the eye gives us when we climb up high and take a long-range look at the landscape — we see objects which we could not see at all close at hand, and some which seem quite different from our first impression. We orient each into its relative position with respect to other objects and to the picture as a whole. When a scene is simple and uncomplicated, there is less need for the view from the crow's nest, but when the scene is crowded and diffused and alive with puzzling and sometimes inconsistent movements, the more perspective we can give it the better.

So it is today with this highly complex and technical society in which we live. The more complex it becomes, the more the individual needs to specialize and to narrow the focus of his own effort. Yet the greater degree of specialization we achieve, the greater the need for perspective that can balance and equate the diverse elements in terms of the broader purpose.

The technical student of 50 years ago could hardly have seen, in his simple experiments, the kind of social and political forces which now exert pressures upon our society — many, if not all of them, arising from the changes brought about by advancing technology. The technical student of today, in contrast, must recognize and understand these forces exerted by labor, by government, by the courts, or by public opinion just as he must understand the stresses and strains of physical phenomena. Otherwise, his capacity to provide the proper kind of leadership will be severely limited.

The liberal arts curricula of 50 years ago, with the emphasis directed properly on the classics, could

THE LIBERAL ARTS

Annual art exhibit in New York's Washington Square, as photographed by Ward Allan Howe.



scarcely have anticipated that our technology in a few years would revise all previous estimates of human progress. They could hardly have foreseen that old and well-accepted doctrines like the Iron Law of Wages, or the Limited Market, would collapse under our great outburst of productivity and invention. The liberal arts courses of today, if they are to be described either as liberal or as arts, must include a thorough analysis of the impact and the meaning of technology. Students should come to recognize not only the vital part technology has had in human improvement, but the conditions essential to its survival — the capital requirements, the incentives, and the environment in which it can operate to the best advantage.

It would seem odd that there should be any controversy about so plain or so significant a force as technology, yet it is obvious that misunderstandings do exist. Failure to understand the nature of technology is the basis of many of our present national and international tensions. Misunderstanding represents a threat to our military security and our economic growth, each of which depends on our technical development. It is at the root of much labor-management dissension. Political discussions on questions of taxation, tariffs, monopoly, and even of defense often betray a tendency to what we might call optical delusion — failure to see the other side.

The danger is that we tend to look at life not as through a window, but through a mirror. And we are likely to see only the image of ourselves rather than the clear and undistorted truths that lie just beyond. Mirror-thinking is giving us too much of our own and not enough of the other fellow's point of view. What we must have is an exchange of viewpoints to give us the whole picture.

The role of leadership in tomorrow's world will be assumed neither by those who know a great deal about a very little or a very little about a great deal. It will be discharged only by those whose thinking is broad and uninhibited, those with grasp and understanding — leaders, in short, whose horizons are wide enough to comprehend the world in which we live.

This, of course, is the basic objective of the liberal arts as it is the basic objective of all education. Here we have the truly educated man, well equipped to comprehend fully the world he lives in. This is the prime goal of all education, just as it is the prime criterion of all leadership.

Industry is well aware of the fact that its progress depends very importantly upon the character and caliber of those who will become its leaders in the future. Any industrial concern or any responsible industrial official will list as the Number 1 problem the ever-threatening shortage of both technical and management talent for the future. This kind of talent needs long and careful training in the universities under careful and expert guidance from faculty and administration.

Industry is well aware also that such a program is a highly expensive undertaking. I think it can be said, further, that industry is well aware of the present financial difficulties faced by many, if not most, of our colleges and universities and of the even more

critical problem of providing adequate facilities for the future.

So much has been said recently about the troubles of the American educational system that we are likely to minimize and underestimate its remarkable strength. The educational system is one of the greatest, perhaps the greatest, of our national resources, and certainly it represents collectively one of the largest enterprises ever undertaken. In units, it is made up of more than a quarter of a million elementary and secondary schools, nearly a thousand colleges and universities, some 500 junior colleges, and over 250 teachers' colleges or normal schools. Total assets in educational property alone are something over 15 billion dollars which, I am told, exceeds the national wealth of most nations; only six countries in the world, in fact, have a total wealth exceeding that represented in the American educational investment. Annual expenditures for public education are now something like four billion dollars, or as much as we spent for our entire government expense not so long ago. The total endowment in colleges and universities exceeds two and a half billion dollars. In our teaching profession, we have a dedicated group of more than 1,000,000 men and women who are giving us increasingly high standards. Make no mistake about it — our educational system is on a firm foundation and its future rests on a very strong base.

Despite these impressive assets, the needs are very great. In the universities, we must cope with rising costs, greatly increased enrollments and, I am afraid, diminishing prospects of capital funds from former sources. And, despite my assurances that industry shares your concern over these problems, I can offer no neat solutions. It does seem to me that there are three possible sources of relief for the most urgent needs, all of which must be considered.

The first and most obvious, of course, is a continuation and increase in the help given to universities by corporations and foundations. Corporations must and will give generously, if only as a matter of lively self-interest. Last year, our company contributed about \$800,000 in support of higher education, and it is estimated that the American industrial establishment is now contributing more than \$100,000,000 a year to the support of various universities. Increasing percentages of this should, in my opinion, be committed in one way or another to the liberal arts institutions. I think it probable that the amount contributed by industry might well be doubled over the next 10 years, but, as you well know, even if it were, it would account for only a small portion of the annual need.

A second possibility of financial relief is more long range in nature. For the capital needs of higher education, universities face the sober fact that large gifts and bequests which built much of the present American university plant will probably provide less and less in the future. In the 50 years between 1880 and 1930, private gifts to education amounted to more than two billion dollars, or, in terms of present costs, almost five billion dollars. The ability of people to accumulate funds for such wide-scale philanthropy has now been curtailed by current tax philosophy. If

(Continued on page 214)

Dollars from Wastes

Food and Other Agricultural Waste Can Supply Many

Raw Materials for Manufacturing Products Now

Made from Our Dwindling Natural Resources

By HARRY W. VON LOESECKE

ABOUT 550 billion pounds of food are produced annually in the United States for feeding our population. Before reaching the consumer, practically all of this food is processed in some manner during which there results an enormous volume of waste, both solid and liquid. Table 1 gives an estimate of solid wastes created by processing certain fruits and vegetables, and amounting close to 10 million tons annually. This figure will, of course, vary according to the quantity of fruits and vegetables processed each year. This quantity of waste is equivalent to the garbage of 85 per cent of the population of the United States, which each year must dispose of an additional 12 million tons accumulating in the home preparation of food. In addition to processing wastes of fruits and vegetables given in Table 1, there are field wastes brought about in preparing fresh fruits and vegetables for the market. These wastes probably amount to some 2.5 million pounds annually. There are further wastes created in meat slaughtering operations, sugar making, grain milling, alcoholic beverage manufacture, poultry processing, soluble coffee production and processing dairy products.

The housewife disposes of her garbage by burying or burning it, or through municipal collections. In general, the food processor must take care of his own wastes, and in many instances has turned these materials into dollars.

Most food processors find that disposal of liquid wastes resulting from washing, blanching, and clean-up operations are the most difficult and expensive disposal problems. Turning these wastes into dollars appears to hold little hope because the waste products are generally too dilute for the economic recovery of materials of value. In isolated cases, liquid wastes have been used for irrigation.

Citrus processing wastes have become of increasing importance during the past two decades. Whereas in 1930 only about 9 per cent of the citrus crop in the United States was used for processing, today close to two-thirds of the crop goes into processed products, creating some five million tons of solid wastes. Of this amount, about 4.5 million tons are dried for cattle feed with a value of about 13 million dollars; 100,000 tons are used for pectin manufacture worth some 20 million dollars, and from 600 to 1,000 tons are utilized for brining, candying and marmalade manufacture.

In disposing of one waste, it sometimes happens that another is created. This occurred in the utilization of citrus wastes for cattle feed. In processing the waste, many plants press the material to decrease

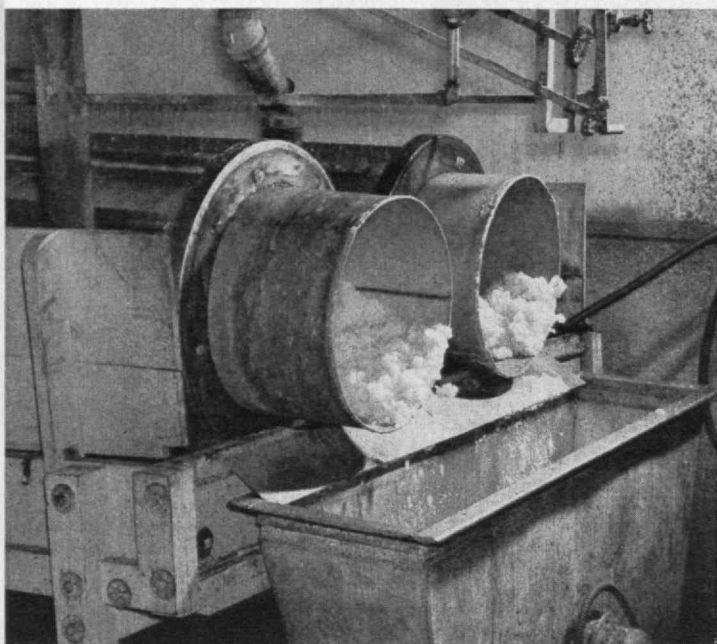
the water content so that less moisture will have to be removed in the driers. Mechanical removal of water is less expensive than removal by evaporation. The press liquor obtained in this operation, amounting to about 7,000 gallons for every ton of dry feed produced, contains on the average 10 per cent solids, and cannot readily be disposed of without danger of creating public health nuisances. The material is therefore evaporated to yield a molasses which may either be added back to the dry feed, or sold to mixed feed manufacturers. Approximately 50,000 tons of such molasses is produced annually.

Citrus oils, such as lemon, orange, and grapefruit are also obtained from citrus waste. Such oils, whose

TABLE 1

Estimation of Amount of Waste Created Annually in the Processing of Certain Fruits and Vegetables

<i>Commodity</i>	<i>Nature of Waste</i>	<i>Estimated Amount (Tons)</i>
VEGETABLES		
Asparagus	Butts	45,000
Beans, lima	Vines and pods	80,000
Beans, snap	Snips and culls	30,000
Broccoli	Trimmings	12,000
Beets	Trimmings	35,000
Cabbage	Trimmings	40,000
Carrots	Trimmings	20,000
Corn, sweet	Husks and cobs	1,300,000
Cucumbers	Culls	30,000
Lettuce	Trimmings	345,000
Peas	Vines and pods	1,300,000
Spinach	Trimmings	50,000
Tomatoes	Skins, cores, culls	900,000
<i>Total Vegetables</i>		4,187,000
FRUITS		
Apples	Peels and cores	215,000
Apricots	Pits	60,000
Cherries, sour	Pits	15,000
Citrus	Peels, rag, seeds	5,000,000
Peaches	Pits and peels	270,000
Pears	Peels and cores	145,000
Plums	Pits	1,500
<i>Total Fruits</i>		5,706,500
<i>Total for Fruits and Vegetables</i>		<i>9,893,500 Tons</i>



California Fruit Growers Exchange

Draining pectin obtained from waste citrus peel. Some five million pounds of citrus pectin are produced annually to be used in making preserves and confectionery.

total production has been estimated to have a market value of some six to eight million dollars annually, find extensive use as flavoring materials in confections, dessert powders, cookies, cakes, extracts, and soft drinks.

Of importance, too, is the recovery of certain flavonoids from citrus wastes, a venture stimulated in 1936 by reports of the vitamin-like (vitamin P) activity of water extracts from lemon peels. While so-called vitamin P has lost favor as a vitamin, reports continue to suggest that it may have some important pharmacological properties. There has therefore been a rather steady production of flavonoids from citrus wastes. Hesperidin is produced from orange peels and has certain therapeutic properties, naringin, a flavanone glycoside, is extracted from grapefruit peel, and is used commercially to impart a bitter flavor to beverages, confections, and to marmalades made from sweet oranges. Naringin has no known therapeutic properties. Although production of these two compounds is not great, they are high-priced commodities.

Apple wastes, created in the preparation of apple juice, vinegar, preserves, and other apple products, amount to around 215,000 tons annually. Such wastes are dried and used either for cattle feed, insect baits, or for preparing pectin; production of the latter amounts to about a million pounds a year. Pear canning waste is converted into livestock feeds by an inexpensive chemical treatment and a special type press, a procedure developed by scientists of the United States Department of Agriculture. Of the estimated 145,000 tons of pear waste occurring annually in the United States, about 50,000 tons are produced alone in the San Jose area of California. These 50,000 tons will yield about 4,700 tons of pear molasses and 4,500 tons of dry pulp, with a value of from \$200,000 to \$300,000.

Apricot and peach pits, accumulating in canning, freezing, and drying operations, are crushed between

steel rolls to remove the kernels which are used for the preparation of both a fatty oil and a flavoring oil. The refined fatty oil may be used as an edible oil, in pharmaceuticals, and in cosmetics. Apricot pits are utilized for the preparation of bitter almond oil, the raw material being the press cake after expressing the fatty oil. Practically all of the macaroon paste used by bakers is made from apricot kernels.

In the making of wine, about 110,000 tons of pomace, lees, and argols are obtained annually. This waste material contains approximately 5,000 tons of tartrates with a value of some four million dollars. Only about 50 per cent of the tartrates present in the wastes are being recovered, chiefly because of the lower price of imported tartrates. Tartaric acid and tartrates are extensively used in foods, in silvering mirrors, in textile printing and dyeing, in photography, and in the leather industry.

Peas and corn lead all vegetables in the tonnage of waste produced. Pea waste is largely in the form of vines which may be stacked in open stacks containing up to 2,000 tons of vines, adjacent to the viners at the processing plants. The stacked vines undergo a curing process similar to that obtained in a silo. The cured material is used as a cattle feed, offering a small return to the processor. Leafy vegetable wastes, rich in proteins, minerals and vitamins, are sometimes dried and converted into meal for livestock and poultry, and for the extraction of chlorophyll and carotene (provitamin A). Another product of this extraction is xanthophyll, used in poultry feeds to give a yellow color in the skin and shanks of poultry, thus increasing consumer demand.

Some 900,000 tons of tomato waste are available yearly. This waste, after pressing, is dried and sold for feed, representing a value of nearly \$3,000,000.

An estimated 1.3 million tons of cobs and husks result from the processing of sweet corn. To this amount must be added about 15 million tons of cobs made available from shelling operations on farms, at country elevators, seed plants, and at some corn-milling plants. Approximately one million tons of these cobs (worth some 10 million dollars) are used annually in cattle feed, for poultry litter and mulch, as an abrasive in finishing metal parts, for molded plastics, hard rubber goods and glass products; in air-blast methods of cleaning, as an abrasive in hand soaps, for cleaning and dressing furs, and as a raw material for the production of furfural. Furfural, with an annual production of about 50,000 tons, finds use as an organic solvent, in the manufacture of certain plastics, in Nylon production, refining Diesel oils, and as the raw material in the preparation of certain anti-malarial drugs.

Every year about 500,000 tons of wheat straw, left in the field by the combine harvester, are used for preparing corrugating paper, the basic material for the indispensable shipping container and other straw-board products. Wheat farmers profit by the utilization of this waste product by an estimated three million dollars annually. Sugar-cane bagasse, a by-product of the sugar mill where juice is extracted from the cane, accumulates at the mill. Annual production of bagasse in the United States amounts to about two million tons. Some of this is burned under the boilers

at the mill to furnish power for sugar production with a resulting savings in the fuel bill. Wet bagasse has a fuel value of from 3,294 to 6,716 British thermal units per ton, compared with about 150,000 Btu per gallon for fuel oil. About 500,000 tons of bagasse are used for the manufacture of insulating and wallboard. Because of the short fibers in bagasse, pulp made from this material must be mixed with regular sulfite pulp to obtain a paper of the desired strength.

Long considered a nuisance in the processing of sugar-cane juices because it fouled evaporators, aconitic acid is now recovered from molasses by a process pioneered by U.S. Department of Agriculture scientists. Louisiana molasses contains from 0.1 to 0.2 per cent aconitic acid, more than molasses produced in Florida. The reason for this is not clear, but is thought to have something to do with the length of the growing season in Louisiana. Available aconitic acid from the Louisiana cane crop amounts to about 15 million pounds annually, but only about 10 million pounds could be recovered feasibly by present methods. Actual production is estimated at one to two million pounds a year with a value of from \$150,000 to \$300,000. The acid is recovered as dicalcium magnesium aconitate, and is used chiefly in the production of high molecular weight esters used as plasticizers.

Of particular interest in turning wastes into dollars is the utilization of certain waste waters from sugar beet factories for the preparation of monosodium glutamate, production of which has an annual value of over 13 million dollars. This product, the sodium salt of glutamic acid (an amino acid), is sold under such trade names as "MSG," "Accent," and "Zest." Although not itself a flavor, it has the property of enhancing flavors of such foods as meats, poultry, fish, and certain vegetables to which it is added.

Poultry processors have long had a serious problem in disposing of feathers accumulating at the rate of from 50,000 to 70,000 tons annually. The feathers are wet, frequently mixed with blood, manure, and other refuse, and are subject to rapid deterioration. The bedding and upholstery industries are the largest users of feathers in their natural state. Greatest demand is for clean, white waterfowl feathers, but not enough geese and ducks are produced in the United States, so chicken and turkey feathers are sometimes used. Feathers are also converted into a meal in areas where a considerable concentration of poultry exists.

Technique of processing feathers for meal is comparatively simple: the wet feathers are treated with steam at 40 to 60 pounds pressure and the resulting material dried in a rotary drier. The product is used chiefly as a fertilizer, but has possibilities as plaster-setting retarder, for the production of foam-producing compounds used in fighting oil fires, in waterproof glues, in combination with phenolic type synthetic resins for molded products, and as a protein feed supplement.

Of the 150,000 tons of poultry offal (heads, feet, and inedible viscera) available each year at centralized eviscerating plants, most is used fresh as hog feed and fertilizer.

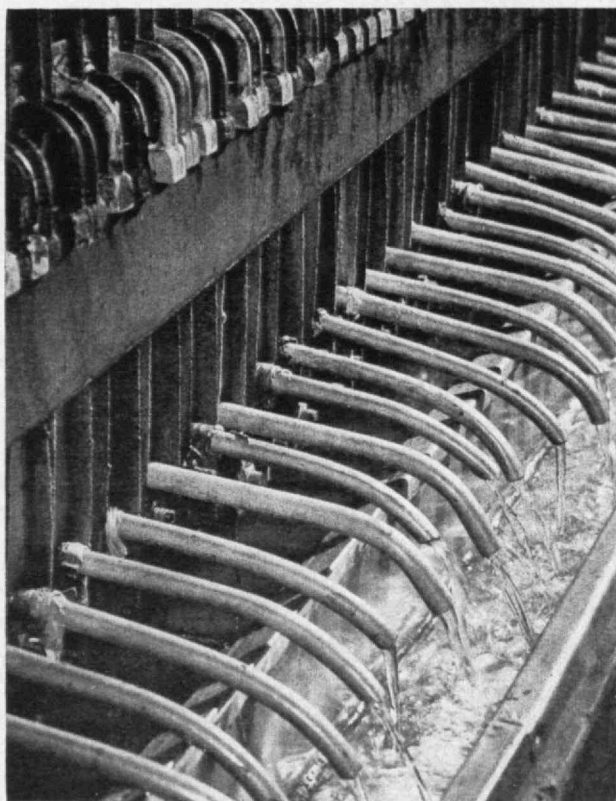
The most important by-products of the meat packing industry are the fats. They represent as much

as 18 per cent of the sales value of the products of the plant. Edible animal fats are produced exclusively in meat packing plants, while the inedible fats are produced partly by meat packers and partly by independent renderers. Edible fats comprise lard from hogs (amounting to about 90 per cent of the edible fats), and oleo oil, oleostearine, and edible tallow from cattle and calves, as well as edible mutton tallow from sheep and lambs.

Inedible fats produced by the packers comprise inedible lard (greases), and inedible tallow, the latter amounting to about 75 per cent of the inedible fats, and derived chiefly from beef. Production of inedible fats amounts to around 2.6 million pounds annually. Ten years ago, slightly over 80 per cent of these fats went into soap making, but with the growing replacement of soap by synthetic detergents, only about 45 per cent is now used for soap making. Therefore research has sought new uses for this waste product. A process for making an improved grade of oleic acid (known in the trade as "red oil"), used chiefly as a constituent of textile lubricants and greases, has been evolved by scientists of the U.S. Department of Agriculture. Production of this improved type of oleic acid has an estimated value of close to a million dollars annually. Other uses for inedible animal fats are as a constituent of animal feeds, as a substitute for imported palm oil used in hot-dipping steel plate for cans, and as epoxidized fatty products used as plasticizers for vinyl chloride polymers and co-polymers.

Other important waste products of the meat packing industry are blood, hides, bones, hair, tankage, and glands. The last named, with an estimated annual

(Concluded on page 212)



California Fruit Growers Exchange
Filtering citric acid liquor obtained from waste lemons. About two million pounds of citric acid are produced yearly from lemons, and used in foods, beverages, and pharmaceuticals.

Engineering Education at the American University of Beirut

THE American University of Beirut is located in Beirut, Lebanon, the gateway to the Middle East. This little country at the east end of the Mediterranean is the most modern and liberal of the Arab Middle Eastern countries which include Syria, Jordan, Iraq, Saudi Arabia, and a number of smaller states such as Kuwait and Yemen. These states and the closely surrounding areas, lying on the bridge between Europe, Africa, and Asia have been, through the ages, important in cultural and military history and are today of the greatest strategic importance.

The university was founded by forward-thinking missionaries in 1866 under a charter from the state of New York and has operated practically without interruption in spite of many vicissitudes including two world wars.

Its campus is one of the most beautiful in the world overlooking the ever-changing Mediterranean and the often snow-capped Lebanese Mountains beyond the harbor. Its buildings and equipment are such as are found on any American campus. The language of instruction is English and the textbooks are, for the most part, American. To the amazement of most visitors its students in language, dress, and manners seem to create the atmosphere of a typical American University.

During its history the university, by virtue of its liberal Christian teaching, became a center for advanced thinking and from it many of the present-day leaders of the Middle East derived their knowledge and strength. Because of its educational service and the encouragement and assistance rendered in the struggles against the Ottoman Empire, and later against the French, the prestige of the University and of America was unbelievably high until the establishment of the state of Israel.

Though it is presently getting some assistance, primarily scholarships, from the American Foreign Operations Administration (Point IV Program) it is fundamentally a private institution with both the important educational potentials and the acute financial problems of such institutions. The great strain of attempting to secure the necessary general financial support was undoubtedly the primary cause of the death of its recent president, Stephen B. L. Penrose, Jr.

The Middle East

The area known as the Middle East has witnessed the emergence of man from the most primitive level and his development to some of the highest cultures the world has known. It has witnessed the rise and fall of states and civilizations. This particular bit of coast line has felt the flow and ebb of conquering people from prehistoric times, including such familiar recent groups as the Greeks, Romans, Crusaders,

Mongols, Turks, French, and English. During the Middle Ages this area was the repository of the literature and science of the ancient world and from here it was reintroduced into Western civilization. Here were founded the three great monotheistic religions of the world.

Near Beirut are archaeological finds which go back more than 5,000 years. And within the Middle East area are the remains of some of the most colossal, beautiful, and useful structures ever built by man, such as the temple at Baalbek, the Palace of Xerxes, and innumerable irrigation works including those of the Tigris and Euphrates Rivers. Here our engineering forebears diverted rivers, constructed canals, and with piles of stones even artificially snatched, from reluctant clouds, water in sufficient quantity to supply villages.

Meanwhile for hundreds of years the forests were being stripped. Then accelerating this process there came a period of war and pillage—the crusaders, Genghis Khan, and others. The capital and momentum of civilization were dissipated, hydraulic works destroyed or neglected, and the effective control of water was lost. With the failure or uncertainty of water, life became precarious and the culture one of scarcity. The area inherited a primitive agriculture which even now appears much as it must have to Alexander, Caesar, and Christ, and includes nomadic herders though these are fast disappearing.

The Middle East Today

Though many of the present countries have adopted the forms and appearance of democracy, the spirit of the organization and administration is still fundamentally feudal. The culture of most areas holds women in low status and the children are tightly controlled by the family. Much of industry is still in the handicraft stage—some forms of which, though often of high quality, are not generally suitable for trade because of lack of quality control.

Trade is too largely on the individual, time-consuming bargaining basis and prices are the maximum the traffic will bear with little or no regard for the value of repeat orders.

Life, for the vast majority, is hard and unemployment and emigration high. It is the remittances of hundreds of emigrants to America and Africa who must often leave their families behind which, particularly in the Lebanon, very largely account for the balancing of the family and the national budget.

All these conditions are now in rapid transition for the better—primarily as a result of the exploitation of oil, the effect of two world wars, and of the improvement in education, communications, and travel. Lebanon (and Beirut in particular), with the relatively cosmopolitan outlook of a seaport, is the most ad-

***Modified to Meet Extraordinary Conditions,
American Methods of Engineering Education
Help Bring Technology to the Middle East***

By EDWARD S. HOPE

vanced in the transition and real progress is being made in industrialization. Iraq through the work of its development board seems likely to lead the way in public works of which the most important are flood control and irrigation works on the Tigris and Euphrates Rivers.

The resources derived from oil are making possible the redevelopment of the oil rich countries and also attracting development capital to these and to some of the other countries. Some of the projects like the distillation of sea water for domestic water supply in Kuwait may be forerunners of similar projects in other parts of the world.

Needs

During and following World War II the countries of the Middle East obtained real or nominal independence. With the development of oil and the resurgence of trade and related developments the need for trained local personnel in all fields became urgent.

The American University of Beirut and other institutions had prepared many men for various government positions. Schools of Engineering had been established in Egypt, Syria, Iraq, Iran, and Lebanon. In Beirut the French Faculty and A.U.B. had been preparing civil engineers. Some young men had studied in the United States, England, and on the Continent. There was then, a relatively large number of engineers and plenty of labor but a scarcity of technically trained craftsmen particularly in heavy construction and industry.

The great development projects call for the education of many more professional engineers and technicians. Experience has shown that these can be educated more successfully and at less expense within the area since the education obtained in the United States or in European countries is not specially adapted to the culture and problems of the Middle East. The provision of suitable educational opportunities is therefore one of the primary needs of the area.

The great need and justification for the existence of the A.U.B. Faculty of Engineering is the offering of a superior quality of engineering education and graduate work on a regional basis.

Faculty of Engineering

The Faculty of Engineering was established as a result of a careful study of the needs of the Middle East. The idea was approved by alumni and leaders. Financial supporters were found of whom Stephen D. Bechtel was one of the most important. The purpose of the Faculty is to serve the Middle East by providing the necessary educational opportunities and assisting in the development of its resources with

particular regard to engineering, much as the university had earlier exerted a leadership which contributed so largely to the political independence and development of the Middle Eastern countries. In the transition which is changing the area from feudal agricultural communities to modern states in which technology and industry are developing rapidly, the A.U.B. is exerting leadership in engineering education which is adapted to the conditions and needs of the area.

In May, 1951, on the recommendation of the newly appointed dean, C. Ken Weidner, the writer was invited by the president, the late Dr. Penrose, to participate in the establishment and development of the Faculty of Engineering. At that time the university consisted of the schools of Medicine, Nursing, Pharmacy, and Arts and Sciences. The latter included a department of civil engineering which had been in operation since 1940.

The School of Engineering began operation in the fall of 1951 by taking over the existing program leading to the B.Sc. degree in civil engineering and establishing a new program leading to the bachelor of civil, mechanical, electrical, and architectural engineering. In the fall of 1952 we occupied the new engineering building which had been planned and its construction supervised by the faculty of the School. This is a modern reinforced concrete structure with a floor area of 50,000 square feet. The capacity of the plant has now been further increased by the addition of two other buildings totaling 38,000 square feet and containing shop and drafting room space. Due to the shortage and unreliability of electric power in the city, what had been planned simply as a power laboratory has for the past three years been supplying heat and electricity to the group of engineering buildings and also to the central university library.

Educational Requirements

In developing an educational program it was necessary to keep in mind the professional engineering needs of the area, the accreditation requirements under the New York Board of Regents, and also compliance with local legal requirements. The latter problem, a heritage from the French mandate, grows out of a fundamentally different type of education than our American system. The French system emphasized theory and length of time in school, and the right to practice is based on the engineering degree itself, rather than on evidence of practical professional capabilities as determined by a professional board after graduation and a period of service.

Organization

The Faculty of Engineering of the American University of Beirut has been organized in three parts:

the School of Engineering, the Institute of Technology, and the Science and Service Laboratories.

After much consideration it was decided that the School of Engineering, the professional school, should prepare for the fundamental branches of civil, mechanical, electrical, and architectural engineering. Because of the importance of oil there is considerable interest in petroleum engineering but it was not feasible to offer this program. Although the demand for civil engineers will probably be the highest and for architectural engineers the lowest, it was decided that the economy could absorb engineers in all these branches. In 1955 we graduated a total of 34 students of which 15 were civil and only 3 architectural. Incidentally, the architectural course includes all of the structural work taken by civil engineers so that the architectural graduates should be thoroughly capable in the field of design.

The Institute of Technology is being established to provide educational programs for technologists in industry and area development. Service courses are provided in engineering technology for other schools in the university such as Agriculture and Public Health.

A technical and vocational school was originally conceived of as a means of more fully utilizing the equipment and specialized personnel which was necessary for the shopwork of the professional school and of also studying and helping to meet the very real need for the training of modern craftsmen and technicians such as electricians, machinists, and surveyors. Recently several other technical and vocational schools in Lebanon and other countries have been enlarged and improved with the assistance of the American International Co-operation Administration. Consequently our service in this field which really began only in the fall of 1953 will be reduced accordingly.

The Science and Service Laboratories were planned to utilize more effectively the great amount of equipment which is needed for instructional purposes but which would normally be used for only a small part of the time. As a service laboratory for construction and industry in the area, it is meeting a real need and justifying much more equipment than could be economically supplied for teaching our small student body. These laboratories and service facilities also

provide an outlet for the specialized abilities of the teaching staff and a contact with the current problems within the area. The laboratories have rendered consulting services on structural materials, steam equipment, foundation conditions, geology and mineral deposits, including the reinvestigation of ancient iron mines.

Problems

In addition to the educational requirements previously noted, there are certain problems arising from the multinational backgrounds of our students. Although located in Lebanon and subject to its laws, the university is essentially a regional institution serving the area as a whole with students coming from 57 different countries. Most of these countries have their own national universities which offer engineering training. These countries differ widely in language, religion, technical development, and educational and general cultural background.

The preparation given in the secondary schools is of fundamental importance but there is a wide variation in curricular content, quality, and language of instruction which is generally either Arabic, English, or French. All local students in the university are bilingual and most multilingual. They generally bring a good mathematical training but many are weak in science since the secondary schools provide practically no individual laboratory work and very little demonstration by the teacher. This is largely a matter of economics since pure mathematics requires little equipment and science laboratory equipment is not available to most secondary schools.

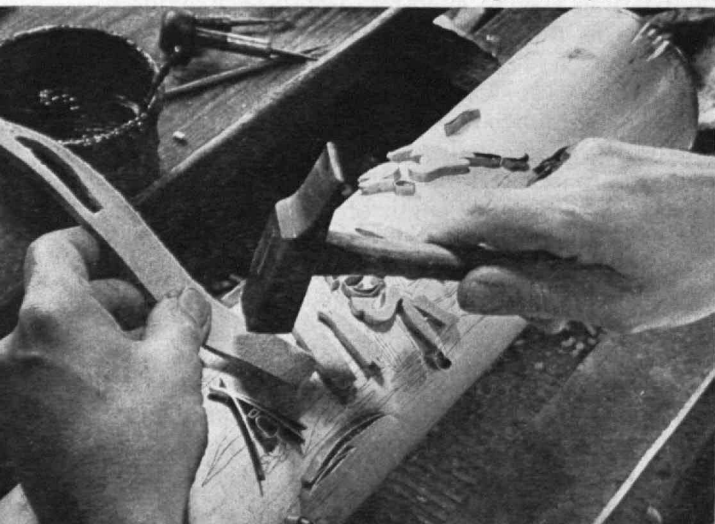
Although there is little, if any, congenital difference between peoples and students in various parts of the world, environment has emphasized certain characteristics. Individualism is one of the most outstanding characteristics of the people of this area. While this characteristic is valuable — and also contrary to Communism — some of its manifestations are not so happy for it tends to prevent political, economic, and social co-operation which are essential for the various phases of development of the area.

Individualism strongly influences the whole area from persons to states. Most businesses are individually owned and operated whether they be stores or engineering firms. The larger ones are often family enterprises but seldom partnerships and practically never stock companies. This naturally limits the size and effectiveness of businesses and retards industrial development. Individualism is also reflected in the lack of co-operation among the Arab states and contributed largely to the ineffective resistance to the establishment of the state of Israel, one of the most humiliating events in Arab history. Added to this are the divisive influences of religions and sects and the educational and political heritage from the mandates. France, in particular, through its promotion of the French language, institutions, and culture has left a long-standing and crippling schism in Lebanon.

Student Characteristics

Although our students are much like American students in many respects, the average American student is no match for his Middle Eastern counter-

W. Eugene Smith from *Black Star*

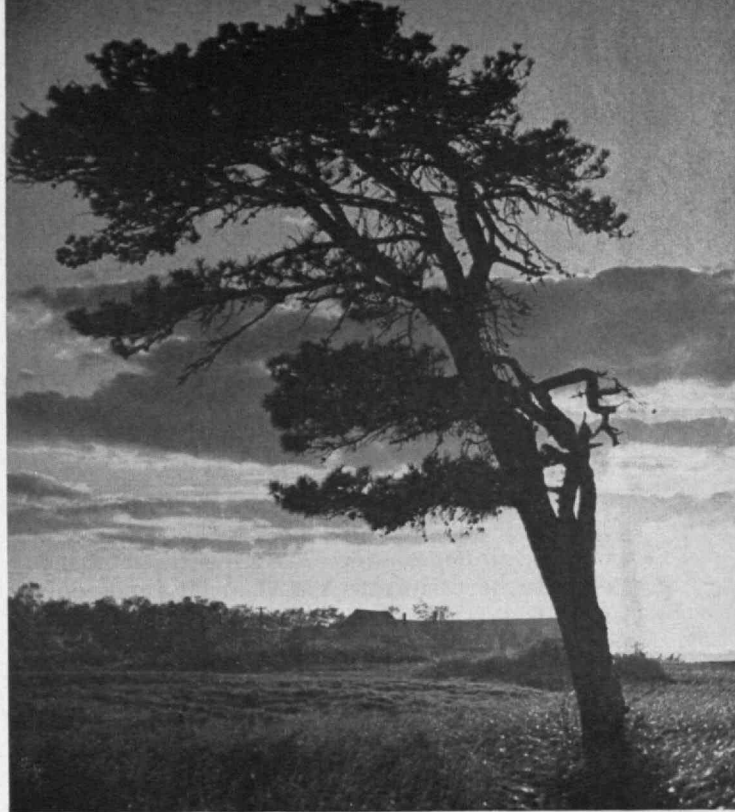


part in the matter of language and politics. They know Arabic, their native language, and English partly because it is the language of instruction and partly because it is an important world language which they feel they should know. In addition the majority are fluent in at least one other language, probably French. These languages are not studied as a subject to be passed, as is too often done in America, but as a means of communication which leads into science, trade, and politics.

To the average American student, politics consists mainly of a bit of skulduggery recurring annually on the campus for a brief period and some distant echoes from the municipal, state, or national elections in which he somewhat vaguely understands he must take some part during later years. But to the Middle Eastern student, politics is a vital everyday matter. The average Middle Eastern student probably knows at least as much about American politics as an American student. He knows far more about the United Nations and international politics than the average American student because it is a vital thing to him. American and United Nations actions regarding Palestine and Israel have created a million Arab refugees (including perhaps himself). He follows international politics because a vote in United Nations may profoundly influence his life and within a few hours he knows that Russia has vetoed a measure that might have injured his country or his father's business. Long before he enters college he probably owes allegiance to some national party. Campus politics is based not on fraternities or clubs but on national and international political parties and the issues are too often national or international and masterminded by persons off the campus who often consider nothing more important than themselves and their party. If we try to convince students that the life of a student is a period of preparation and that if they study they will be better able to perform for themselves and their countries in the future the reply is that for them, "the future is now." In this they may be right!

One of the first characteristics to come to my attention was a paradoxical spirit of fatalism, defeatism, and cynicism combined with reluctance to admit individual inability. This area, and particularly the Lebanon, has been in the pathway of conquerors for thousands of years and the history of its city states, or larger units, has been one of various subjugations and vassalages with only brief periods of freedom. In general, governments are not looked upon as being of, by, and for the people but a source of privilege or handicap depending upon one's personal standing with the powers that be. Here are found some of the best and most enlightened laws in the world but they cannot be depended upon to operate impartially and effectively. Circumvention is expected whenever expedient. In the light of this general background and the all-pervading refugee problem there is a tendency for the students to feel helpless and any possible efforts they may make toward bettering conditions as futile.

On the other hand there is sometimes an exasperating reluctance to admit individual ignorance or inability. So often when one asks "Do you know?" or



Arthur Griffin

"Can you do?" he receives the quick reply "I know, I know," but the experienced teacher or employer proceeds to find out for himself whether the young man does in fact "know." Perhaps this "front" was a part of the pattern necessary for existence under the conquerors and the hard conditions of life which still exist, to a large extent, for most people. However, once students discover that they are not expected to know everything but to learn, they settle down to be generally eager and apt pupils.

One of our special programs, referred to as the "Cultural Sequence," includes a study of the development of social and political institutions, technology, art, religion, and philosophy and shows the evolution of Western civilization and particularly that of the United States. This was planned to give background, perspective, and encouragement. More recently the Egyptian revolution and other Arab successes have tended to reduce this spirit of defeatism and cynicism. Discussions and personal counseling also assist in overcoming this attitude.

Curriculum

The curricula represent the joint efforts of the faculty under the dynamic leadership of Dean Weidner and with the advice of various persons in the Middle East; England, and America who are concerned with professional education. They are under continual study and review by all parties concerned, including the students, with a view toward improvement and better adaptation to the conditions and needs of the region.

There have been two complete revisions of the curriculum: The first produced what is referred to as the transitional curriculum, covering four academic years of engineering study leading to the bachelor's degree. The second is the new curriculum covering

five academic years (four calendar years) of engineering study and leading directly to the master's degree.

The most specific curriculum requirement is the national legal enactment that the right to practice professional engineering shall be granted only after four years of engineering study above the French or Lebanese Baccalaureate Part II. A.U.B. and its larger secondary school affiliate have operated on the basis of an American four-year high school followed by four years of college-level work leading to the bachelor of arts degree.

Students enter the School of Engineering after completing the freshman year at the university with a science major which includes college mathematics, physics, and chemistry. The B.Sc. degree in civil engineering has been granted after four academic years of study of engineering. Recently, by setting the Lebanese Baccalaureate Part II as the legal equivalent to completion of our sophomore rather than the freshman year as in the past, the government made it necessary for us to add one year to our curriculum in order that our graduates could meet the *legal* requirements for license to practice. Thus our students now require six years of study on the college level, or one more year than is required in the local or French system of education.

Another incidental legal requirement is that concerning the System of Measurements. The metric system, with the inclusion of a few ancient local terms, has been legally adopted throughout the area. American and English engineering textbooks use English units. In instruction we must use both.

The School of Engineering operates on a continuous basis involving four full terms or quarters during a calendar year. This has several advantages. It permits a higher utilization of plant and equipment than is possible on a two-semester basis. It reduces the elapsed time necessary to qualify for a degree. It is further supported by the fact that student work opportunities are so limited in this area that very few students could obtain work during a summer vacation and those who do can earn little more than subsistence, if that. Consequently it is desirable to hurry them on through school to graduation after which their employment opportunities are enormously increased. In order to keep students from going stale under the continuous load, there is a two-week break between each term and in the summer term there is an emphasis on shop, laboratory, and field work.

The faculty of Engineering at present has three programs of study on which students started in the fall of 1954. The first, which is essentially a master's degree program, involves five consecutive academic years (four calendar years) of academic study in residence after freshman pre-engineering. During this time the student is granted the degree of bachelor of civil, mechanical, electrical, or architectural engineering. He must then engage in engineering work for one year under engineering supervision which is approved by the School. After satisfactory completion of this apprenticeship the candidate will return to the School of Engineering for at least one term where he will prepare and defend his master's thesis

and where he will be a participant in engineering seminars which will be conducted.

The second program involves a period of 13 terms or quarters of course work in residence and two terms of supervised experience on engineering work. One term of this supervised experience is scheduled to come at the end of the third academic year of study, and the other term after completion of studies in residence. This curriculum is less specialized than the former program. After satisfactory completion of this program, which covers four calendar years after freshman pre-engineering, the candidate will receive the degree of bachelor of engineering. The highest ranking graduates of this program may, upon petition, work for the degree of master of engineering. This will involve one additional year of course work in residence, one additional year of supervised experience, and the preparation and defense of a thesis as in the first program. These two professional programs are offered in the School of Engineering.

The third program which is offered in the Institute of Technology is not a professional program and does not qualify for license to practice professional engineering as do the first two programs. This consists of a total of four academic years in residence, *including* the freshman pre-engineering year and leads to the degree of bachelor of technology. No courses are offered during the summers, though students are expected to work on engineering jobs, hence this program is comparable in time requirement to the bachelor of arts degree which is offered in the School of Arts and Sciences.

These three programs are planned to meet the needs of the area with respect to professional engineering services and the required supporting services in technology. The first program leading to the master's degree is reserved for students whose peculiar capabilities will best fit them for advanced and specialized work, including research and the conception and design of unusual engineering works. The second program leading to the degree of bachelor of engineering is intended to produce the majority of the professional engineers — those who will perform the bulk of the general engineering work in the area, including the usual types of engineering design, construction, and general services.

The third program is intended to provide technologists who will occupy positions in the labor force between skilled mechanics and engineers, and under engineering supervision will be able to relieve engineers of some of the work they are now forced to perform, such as keeping of personnel and financial records and immediate field supervision.

The curriculum of the first three terms (one academic year) of all programs is identical, consisting primarily of the engineering sciences and shopwork. At the end of this period, those who elect or are selected for the program in technology begin specialized work. At the end of the fourth term, which is at the summer survey camp, students in the professional group who elect and are selected for architectural engineering begin a program which at this stage is slightly different from that of the other engineering students.

(Continued on page 202)

THE INSTITUTE GAZETTE

PREPARED IN COLLABORATION WITH THE TECHNOLOGY NEWS SERVICE

Stratton Named Ford Trustee

HENRY FORD, 2D, chairman of the Board of Trustees of the Ford Foundation, today announced the election of Julius A. Stratton, '23, Vice-president and Provost of M.I.T., as a trustee of the Foundation. A native of Seattle, Dr. Stratton has long been associated with M.I.T. After one year at the University of Washington, he attended M.I.T. where he received the degree of bachelor of science in 1923. He then spent a year at the Universities of Grenoble and Toulouse, and returned to M.I.T. as a research associate in electrical communications, receiving his master of science degree in 1926. He was awarded the degree of doctor of science in mathematical physics from the Eidgenossische Technische Hochschule of Zurich in 1927, and remained in Europe on a traveling fellowship from M.I.T. studying principally at the Universities of Munich and Leipzig. Dr. Stratton was appointed assistant professor of electrical engineering at M.I.T. in 1928. In 1930 he transferred to the Department of Physics and became professor of physics in 1941.

When the Radiation Laboratory was established at M.I.T. in 1940, some 14 months before Pearl Harbor, Dr. Stratton was one of the first members of the staff. In 1942 he was detached from the Laboratory to become expert consultant in the Office of the Secretary of War. During this period he organized a series of technical advisory committees to the Air Forces on programs of ground radar, radar fire control, and radar bombing. His final task was that of assisting in the establishment of a development program for aids to all-weather flying. In recognition of his outstanding service, Dr. Stratton was awarded the Medal for Merit on December 2, 1946, by Robert P. Patterson, Secretary of War. He was chairman of the Committee on Electronics of the Research and Development Board from 1946 until 1948.

Following the termination of the Radiation Laboratory, Dr. Stratton established the Research Laboratory of Electronics at M.I.T. and acted as director until he was appointed provost in 1949. He is the first academic officer to serve the Institute in the post of provost. He became vice-president and member of the Corporation of M.I.T. in 1952.

Dr. Stratton is currently serving as chairman of the Naval Research Advisory Committee, and is a member of the Army Scientific Advisory Panel. He is a member-trustee of the Rand Corporation—a non-profit organization engaged in research for the United States Air Force and other government agencies; a trustee of the Boston Museum of Fine Arts; a member of the Corporation of the Woods Hole Oceanographic Institution; a fellow of the American Academy of Arts and Sciences, the American Physical Society, the Institute of Radio Engineers, and the National Academy of Sciences.

New Director of Libraries

RESIGNATION of Vernon D. Tate as Director of Libraries at the Institute was announced late in December by Julius A. Stratton, '23, Provost. William N. Locke, Head of the Department of Modern Languages, has been appointed to succeed him. Dr. Tate, who will retain the rank of professor at the Institute, has been granted a leave of absence of one year beginning January 1, 1956, and in mid-January he left for Italy where he will undertake a survey of libraries for the Department of State. He will also conduct seminars at various universities in library techniques.

"Under Dr. Tate's direction, the libraries have had their greatest period of growth in the history of the Institute," Dr. Stratton said. "He has made a notable contribution to our library system.

"Dr. Locke has long had an interest in the problems of the modern technical library and in problems relating to scientific aids to learning. He is especially well known for his interest in the complex field of mechanical translation and in the application of scientific knowledge to the study of language. Dr. Locke has led M.I.T.'s Department of Modern Languages, which he will continue to head, in pioneering work in these areas.

A native of Watertown, Mass., Dr. Locke did his undergraduate work at Bowdoin College and took the degrees of master of arts and doctor of philosophy at Harvard University. He has been head of the Department of Modern Languages at M.I.T. since 1945.

Prior to his appointment at M.I.T. he had been a member of the faculty at Harvard and during World War II he served with the Office of War Information. This service included an overseas assignment with a Psychological Warfare unit. Dr. Locke is regional representative for New England of the American Association of Teachers of French. He is former vice-president of the Association and is a member of its executive committee. He has also been active in the Modern Language Association.

Dr. Tate came to M.I.T. in 1947 from Washington, where he was director of photography at the National Archives. During the period he has been at the Institute, the Charles Hayden Memorial Library has been built, the Dewey Library has been established at the School of Industrial Management, and the total of volumes in the libraries has grown from 400,000 to 550,000. A specialist in microphotography, he has increased the use of scientific aids in libraries at M.I.T. and was one of the leaders in establishing a national plan by which doctoral theses are made available in microfilm form all over the country.

A native of Mt. Carmel, Ill., Dr. Tate received his bachelor's, master's, and doctor's degrees at the University of California. He was engaged by the Library of Congress to microfilm documents in Mexico for the historical collection of the United States.

A NEW era of activity for the M.I.T. Club of New York was inaugurated on November 1, when its new quarters on Floor One of the Hotel Chatham were officially opened in a gala evening event. With the advice and assistance of G. Peter Grant, Jr., '35, former President of the Club, and Harry K. White, '99, A. Louis Bruneau, '38, President, cut a cardinal ribbon to



mark the official opening, as shown by the illustrations above and to the right.

The inaugural ceremonies produced a veritable deluge of Alumni, Alumnae, and their spouses, who came from all parts of Metropolitan New York to celebrate the Club's new "home." Before the evening was over, more than 500 members and guests had visited the Club. Such a gathering is the largest in the Club's history, and probably also sets a record attendance for any of the 92 Technology Clubs throughout the world. Many past presidents of the Club were in attendance at the opening — including Thomas D'A. Brophy, '16, W. Joseph Littlefield, '17, Alfred T. Glassett, '20, C. George Dandrow, '22, Raymond C. Rundlett, '22, Samuel H. Reynolds, '22, and Mr. Grant.

As may be surmised from the illustration above, even standing room was at a premium at the height of activities. Fay S. Lincoln, '22, served as official photographer and found considerable difficulty in obtaining sufficient room to make the interesting group of record photographs that mark the occasion. Mr. Lincoln's photographs have fre-

quently graced earlier issues of *The Review* and it is a double pleasure that his present entry into pages of *The Review* records this historic New York event.

A pleasant reading room and lounge is available to members and visitors of the Club. In addition, a dining room is available and luncheons are served Monday through Friday at noon by the Club's own waiters, and on other days through the Chatham Hotel service. Dinner in the evening may be ordered daily except Sunday. The Club facilities also provide office space for Joseph E. Conrad, Executive Secretary, and Miss Patricia L. Hanna. The Club quarters are officially open daily from 8:00 A.M. until midnight.

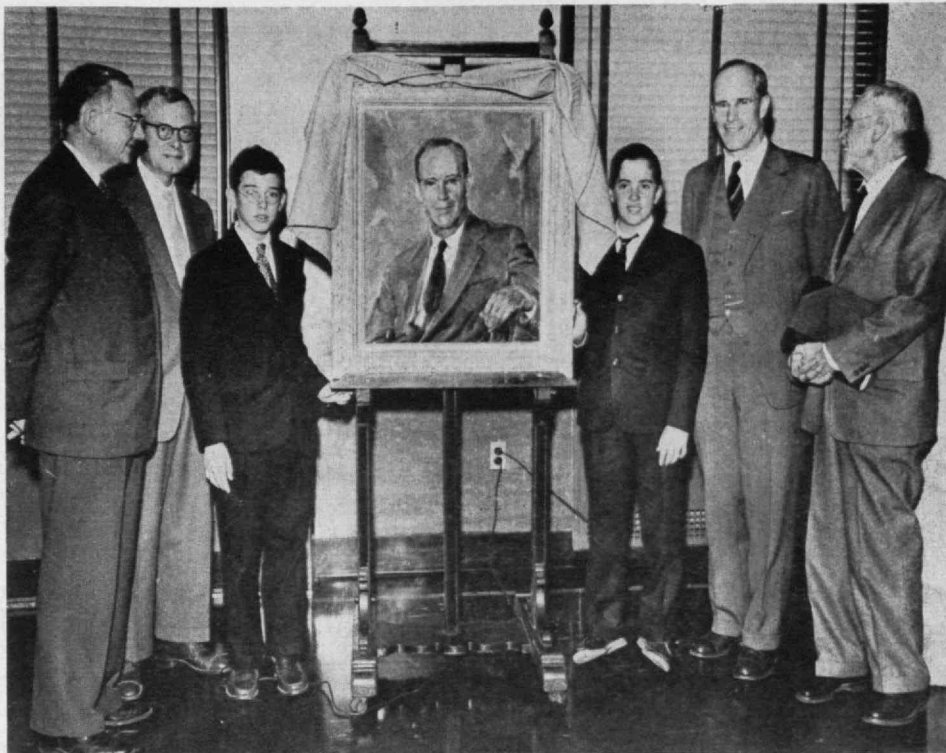
The new facilities represent the outgrowth of a plan inspired by Mr. Grant, and put into effect by the Club's Board of Directors under the leadership of President Bruneau. Alumni are invited to visit the Club's quarters when in New York.

Photos — F. S. Lincoln



Dr. James M. Faulkner (second from right), former Dean of the Boston University School of Medicine, was honored recently by his colleagues who presented to the School a portrait of him painted by William Draper. Participating in the ceremonies were (left to right): Dr. Chester S. Keefer, his successor; Burnham S. Walker, Professor of Biochemistry, presiding officer; sons Andrew and Henry Faulkner who performed the actual unveiling; Dr. Faulkner; and Dr. Paul Dudley White, friend and colleague of Dr. Faulkner's father (also an M.D.), as well as of the family, and teacher of Dr. Faulkner at Harvard Medical School.

Dr. Faulkner is now medical director at M.I.T. His family was well known in Keene, N. H., where the elder Faulkner was a physician for many years. Dr. Faulkner is a director of the New Hampshire Association for the Protection of Forests.



Egan Photo Service

Compton Computer Center

A GIANT computer, first of a new high-speed type for education and basic research, is to be installed at M.I.T. Made available by International Business Machines Corporation, the computer will be the principal tool in a new electronic data processing center, plans for which were announced recently by James R. Killian, Jr., '26, President of the Institute, and Thomas J. Watson, Jr., President of I.B.M. In a joint statement Dr. Killian and President Watson said:

The development and application of electronic data processing is profoundly influencing the education and work of engineers, while at the same time the use of computers is rapidly spreading in science, government, industry, and business.

Great computing machines are making possible advances in research and analyses not hitherto possible and consequently are becoming essential tools for business and financial organizations. Educational institutions will make increasing use of them and will have a major responsibility to educate men and women to realize their full potentials.

M.I.T.'s School of Industrial Management plans to undertake a new program of studies in "operations research," the new field in which data processing methods are applied to manufacturing and distribution problems that are so complex they could never be solved by old-fashioned methods.

Other fields in which research is expected to be done include aerodynamics, where computations will lead to a better understanding of shock waves at transonic and supersonic speed; meteorology, where rapid assimilation of weather data can lead to better forecasting; atomic research, where calculations can throw new light on subatomic particles, and solid state physics.

Other colleges and universities in New England have been invited to share in the use of the machine for research and education of students in computing techniques. The computer will be installed, in early 1957, in the Karl Taylor Compton laboratories.

An advisory committee made up of representatives of New England colleges participating in the program will be formed to advise on such questions as priorities for problems to be submitted to the machine and the suitability of problems. Philip M. Morse, Professor of Physics, will be director of the Computation Center.

With a staff of more than 30 people, the M.I.T. Center will be the largest and most versatile data processing facility yet to be made available primarily for education and basic research. Not only will I.B.M. install the machine but will contribute to the cost of maintaining and operating it. The company will also make a grant supporting studies of research assistants to be selected from New England colleges.

Dr. Morse, the new director of the Computer Center, is a native of Shreveport, La. He studied at Case School of Applied Science, Princeton University, and the University of Munich. He joined the Faculty of M.I.T. in 1931 after a year in research at the Bell Telephone Laboratories and a year as lecturer at the University of Michigan. During World War II he directed research on sound control and underwater sound for the National Defense Research Council and was director of the Operations Research Group for the Navy.

In 1946 Dr. Morse became the first director of the Atomic Energy Commission's Brookhaven National Laboratory. He served for two years and then for one year as research director of the Weapons Systems Evaluation Group of the Joint Chiefs of Staff. He is a member of Scientific Advisory Committees for the Ordnance Department and the Bureau of Standards.

Administrative Appointments

THE number of applications for admission to the Institute has mounted steadily in recent years and is expected to continue rising at an even higher rate. B. Alden Thresher, '20, Director of Admissions, said recently in announcing four administrative appointments. In order to reconcile this increase with M.I.T.'s stabilized enrollment, the staff of admissions officers is being enlarged.

David A. Dudley, a member of the Institute's Faculty and Administration since 1945, has been promoted to associate director of admissions. Succeeding him as assistant director are Eugene R. Chamberlain, former assistant to Professor Thresher, and M. Bryce Leggett, '40, who comes to the Institute from the Sterling Textile Company in Springfield, Mass. John P. Anderson will join the staff early in 1956 as assistant to the Director of Admissions.

Professor Dudley, who served from 1945-1954 as instructor and assistant professor of English at M.I.T., was named assistant to the Admissions Director in 1948, and assistant director of admissions in 1951. Following his graduation from Harvard University, he held teaching posts at Phillips Academy, Andover; at the Berkshire School, where he headed the English Department; and at the Browning School, where he was also assistant headmaster.

Mr. Chamberlain joined the M.I.T. staff last year as assistant to the Director of Admissions, after five years with Downer-Honeywell and Company, Inc., and the Boston Woven Hose and Rubber Company. Graduated from Denison University in 1950, he had previously attended Albert College in Belleville, Ontario, Canada and served for six years in the United States Navy.

Mr. Leggett, chemist and treasurer of the Sterling Textile Company since 1945, had formerly held M.I.T. staff appointments as research associate in colloid chemistry, teaching fellow in chemistry, and research associate in chemical engineering. A graduate of Harvard College, he received his master's degree at the Institute in 1940.

Mr. Anderson, who attended Antioch College from 1948-1950, and served in the United States Marine Corps from 1951-1953, will receive the degree of bachelor of science at Boston University in February. At that time, he will come to M.I.T. as an assistant to the Director of Admissions.

Donald W. Taylor: 1900-1955

DONALD W. TAYLOR, '34, for 23 years a member of the Faculty of the Department of Civil and Sanitary Engineering, died on Saturday, December 24, 1955. He was 55 years old.

Professor Taylor, who was born in Worcester, Mass., received the degree of bachelor of science at Worcester Polytechnic Institute in 1922. He joined the M.I.T. staff 10 years later as research assistant in Civil Engineering. His promotion in 1934 to research associate was followed by successive appointments as Assistant Professor of Soil Mechanics and, in 1944, Associate Professor of Soil Mechanics. The Institute awarded him the degree of master of science in 1942.

Professor Taylor was a participant in the International Soil Congress in 1949. Several years ago when the Alumni Pool building at M.I.T. was built, he was a consultant on soil conditions for the construction of that building, and in 1951 he conducted studies on the characteristics of soil settlement for the Charles Hayden Memorial Library building.

AMERICAN UNIVERSITY OF BEIRUT

(Continued from page 198)

The curriculum for all other engineering students is identical through the first six terms (two academic years) of study, and consists essentially of engineering sciences and shopwork. After this the curricula begin to differentiate and selection must be made by the student in consultation with the faculty as between the basic or fundamental bachelor of engineering program and one of the four branches in the master's degree program. However, even in the third year, there is very little differentiation between the curricula of the different branches and all students take the elementary engineering courses which are fundamental in the several branches. This plan grows out of the condition of the area which still requires more of a general knowledge of engineering rather than high specialization. The organizational and financial problems are also reduced by deferring the differentiation and specialization as long as it is possible to do so.

Selection Process

Growing out of the above conditions and problems, a student enrollment limited to 350, and the great demand for places in the school, there was added to the usual process of comparing records, recommendations and interviews, a four-week qualifying program. In the summer of 1955 there were 120 selected students who took this program consisting of aptitude tests, engineering problems, graphics, shopwork, and athletics. Of these only 100 were admitted to the first-year class. Improved effectiveness in teaching this class over classes which had not been thus selected was immediately evident.

The separate qualifying program as such was discontinued after 1955. It is now incorporated in the work of the first term in engineering. It is expected that some of those who would normally be rejected for professional engineering will be found quite suitable for the field of technology. Also the time and effort invested in students, which is often lost when they drop out during the first or second year of engineering study, will be saved by those who will go into the technology program here at the end of the first year in the School of Engineering.

(Continued on page 204)

BUSINESS IN MOTION

To our Colleagues in American Business ...

This is an announcement of an important new product, Revere Tube-In-Strip, available in copper, brass, other copper alloys, aluminum, and other metals. This is sheet or strip metal that is solid, not a sandwich of two separate sheets. It is rolled from a casting, yet contains longitudinal channels that may be expanded into tubular forms. The Revere method of production is unique and patents have been applied for.

After casting, the metal is rolled until the desired gauge is reached. It is shipped either in long coils, or flat. In the fabricating shop the metal is handled like any other coil or flat stock. It can be drawn, stamped, or bent, and then inflated by pressure applied inside the channels. Since the channels are properly spaced and sized to begin with, the tubes naturally have the same dimensional accuracy. Various numbers and sizes of tubes can be provided for in the same length of metal.

When inflated in the open, the tubes are round. By expanding into dies, the tubes can be made half-round, or given other shapes, such as rectangular, oval, fluted, hexagonal.

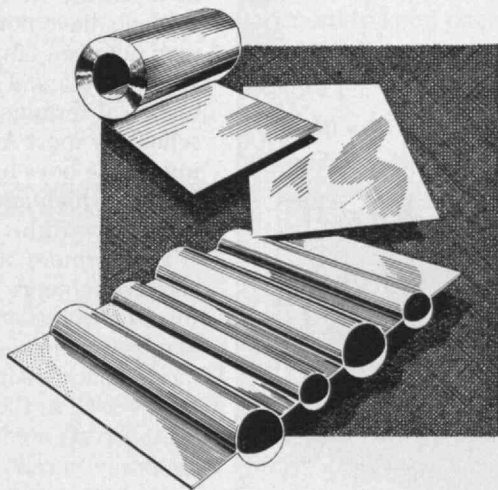
The immediately evident applications for this new material are in the field of heat transfer, as in auto-

mobile radiators, domestic and commercial water heaters and coolers, baseboard and ceiling heating panels, domestic and commercial refrigerators and freezers, and in the processing industries. Since the tubes and the web between them are integral, thermal conductivity is higher. The rigidity imparted by inflation adds to strength, permitting use of lighter gauges, thus again increasing conductivity, as well as

saving in weight and price. Additional economies are achieved by the fact that the metal is sold and shipped as coiled or flat strip or sheet.

Those who have seen this new Revere product have been most enthusiastic. It is stimulating new thinking by designers, engineers, and production men, and there is no doubt that they will come up with numerous ways to use Tube-In-Strip that Revere has not thought of. Like other

members of the copper, brass and aluminum industries, and indeed, all American industries, Revere does not stand still. Let us suggest that you keep in touch with modern developments, no matter what you buy, or from whom. Ask your suppliers to report what they have that is new, and see if you cannot make use of it.



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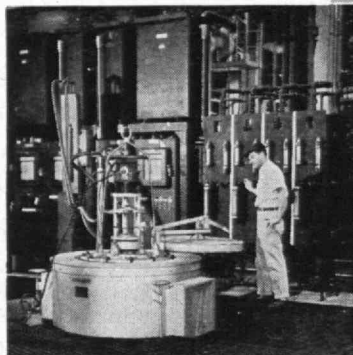
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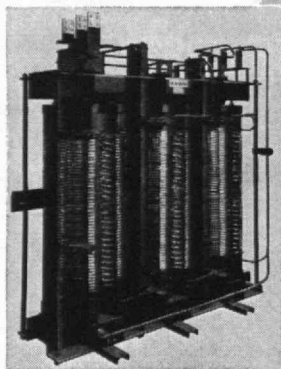


Laboratory

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Air-Cooled

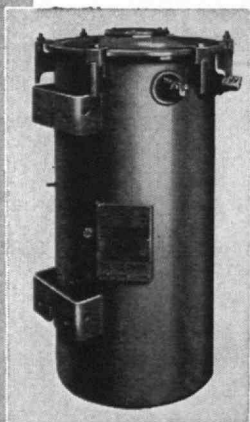
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Elton E. Staples, '26, Exec. Vice President

Chester Meyer, '36, Works Manager

AMERICAN UNIVERSITY OF BEIRUT

(Continued from page 202)

To qualify for promotion each student must pass every subject and his work as a whole must be considered as satisfactory, that is, it should be above the minimum passing grade. If a student fails to pass a course when required to repeat because of failure, he is dropped, or if in the professional school he may be allowed to transfer to the technology program.

Some students have marginal grades in the first year but because of language difficulties, limited background, or other special conditions have not produced up to what is considered their real potential. In a few cases such students may be permitted to spend an additional year between Engineering I and II in a special program of engineering sciences, mathematics, and language practice.

Teaching Methods

Once the student is admitted, his lack of technological background becomes evident and complicates the problem of teaching. His American counterpart grew up with mechanical toys, has operated and repaired bicycles, automobiles, and so on, and has lived in a culture of technology. For the most part our students have not had this opportunity. Indeed some may not even have seen a wheel until they were well along in years. Thus the array of mental images and technical terminology that is brought to engineering school by most American boys is almost wholly lacking. Some boys have suffered from an "effendi" complex in which an upper-class boy would not think of working with his hands.

Furthermore although there are many well-educated engineers in the Middle East, the working force of well-trained, well-paid technicians (which in Western countries is supervised by engineers) is almost nonexistent in the more recently developed trades such as the plumbing and electrical trades, for example. As a consequence, engineers on a job must generally accept very inferior workmanship or must be able not only to properly supervise but also to actually instruct tradesmen.

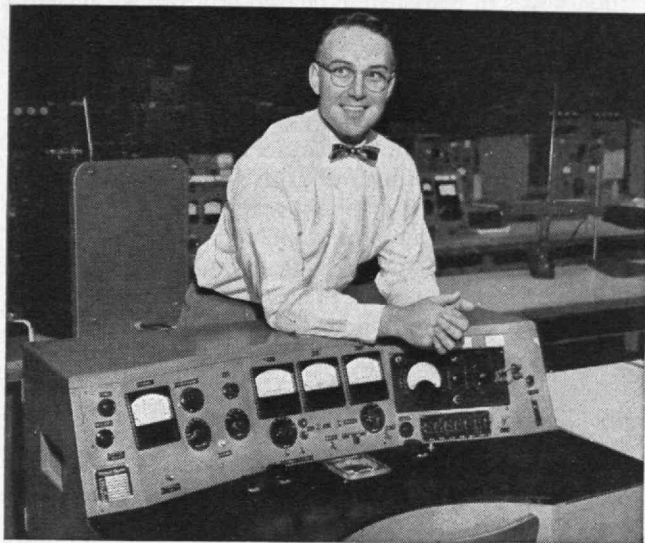
Thus a heavy program of shop, laboratory, and related graphics was considered essential to make up for a cultural background which is weak or almost lacking in technology, to overcome the snobbish aversion to manual work, and to provide graduates with enough familiarity to properly supervise technicians and if necessary demonstrate to them the proper methods of performance. It has been gratifying to see how quickly our students have abandoned the effendi complex and entered into shopwork with energy, enjoyment, and success.

In this connection the techniques as well as the fundamentals of surveying are being taught. In contrast to the action of M.I.T. in discontinuing the Surveying Camp because it does not have time to teach both the fundamentals and the techniques, we have gone to considerable effort to establish a camp. Unlike conditions in America where a graduate works under close supervision of a professional engineer and can learn techniques after graduation, our grad-

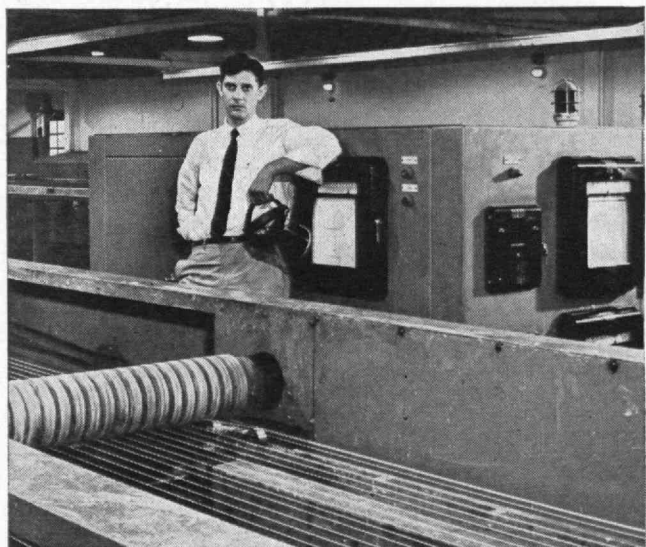
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Young engineers making news at

Western Electric

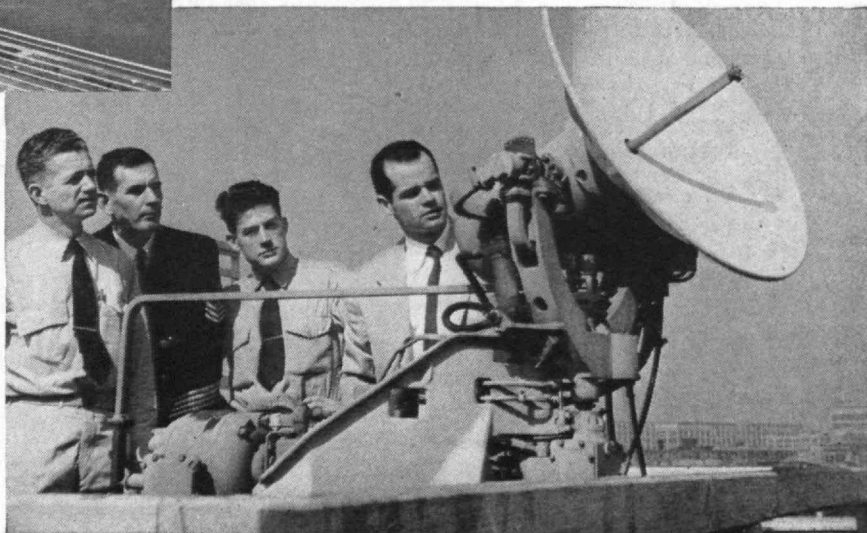


Richard C. Shafer, B.S. in mechanical engineering at Lehigh, was one of 16 engineers assigned to one of Western Electric's toughest post-war projects — developing manufacturing techniques for mass-producing (with great precision!) the tiny but amazing transistors which are already causing a revolution in electronics.



Paul J. Gebhard, B.S. M.E. at the University of Maryland, was one of a team that helped develop Western's new electroforming process for coating steel telephone wire with copper, lead and brass in one continuous operation. His job: to develop conductor resistance-annealing equipment and electrolyte filtration and circulating systems.

Bobby L. Pettit (at right), an E.E. from Texas A. & M., is one of several hundred members of Western Electric's Field Engineering Force. These F.E.F. men can be found all over the world — working most closely with the Army, Navy and Air Force — advising on the installation, operation and maintenance of complex electronic equipment made by W.E.



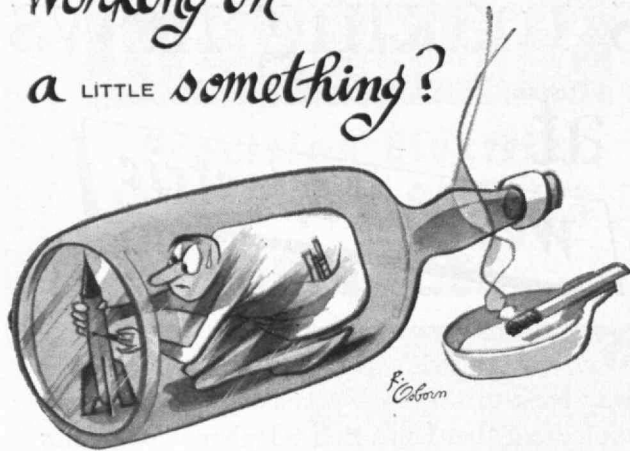
Western Electric's primary job — which goes 'way back to 1882 — is to make good telephone equipment that helps Bell telephone companies provide good service. It's a very big job — and a very important one — which calls for the pooling of varied types of engineering skills.

New manufacturing processes and methods are constantly required to produce better telephones, better central office equipment, better wires and cables, new types of electronic equipment to keep pace with the nation's ever-growing need for more and better telephone service at low cost.

In addition to doing our job as manufacturing unit of the Bell Telephone System, Western Electric is busy producing many types of electronic equipment for the Armed Forces. Here again, young engineers of varied training are doing important work in connection with the manufacture of radar fire control systems, guided missile systems and special military communications systems.

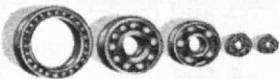
Western Electric offers career opportunities for engineers in all fields of specialization. For details write for a copy of "Your Opportunities at Western Electric". College Relations Dept., Room 1034, Western Electric Co., 195 Broadway, New York 7, N. Y.

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AMERICAN UNIVERSITY OF BEIRUT

(Continued from page 204)

uates are licensed to practice upon graduation and because of a shortage of engineers frequently find themselves in responsible charge of a project of substantial size only a few weeks after graduation. Under these conditions we feel it necessary to teach as much of the techniques as possible in addition to the fundamentals. In this the writer is reminded of the interesting stories of the late Professor Edward F. Miller, '86, which illustrated his idea that any graduate of any branch of engineering at M.I.T. should be able to meet any situation within the area normally assigned to mechanical engineers.

The pressure required to accomplish all this is terrific and the students here have a program of study which is even more demanding than those in the United States. Visual aids, slides, moving pictures, models, and sections of moving parts of machinery and instruction in the laboratory are utilized to the maximum in order to facilitate the acquirement of vivid and tangible experience in place of the previously mentioned lack of opportunity and technological background.

In order to save students' time and also give training in sustained attention and effective use of time, laboratory reports are completed and handed in before the student leaves the laboratory.

Because the virtue of individualism has been carried to a vice it is a matter of educational importance. In order to develop the spirit and habit of co-operation definite steps are being taken. The student body is organized into small groups each including members from all classes and under the leadership of a senior. The function of these groups is primarily one of mutual concern and assistance in scholastic and extracurricular matters and gives the senior the opportunity to gain experience in organization and supervision.

Shop and laboratory work is done on a teamwork basis whenever practicable. Extracurricular activities which include athletics, orchestra, show, yearbook, student society and other projects are also carefully supervised with a view to the development of initiative, co-operation and more especially responsibility. A special feature of the extracurricular activities is the student corporation which, with the senior class acting as the board of directors and the student body

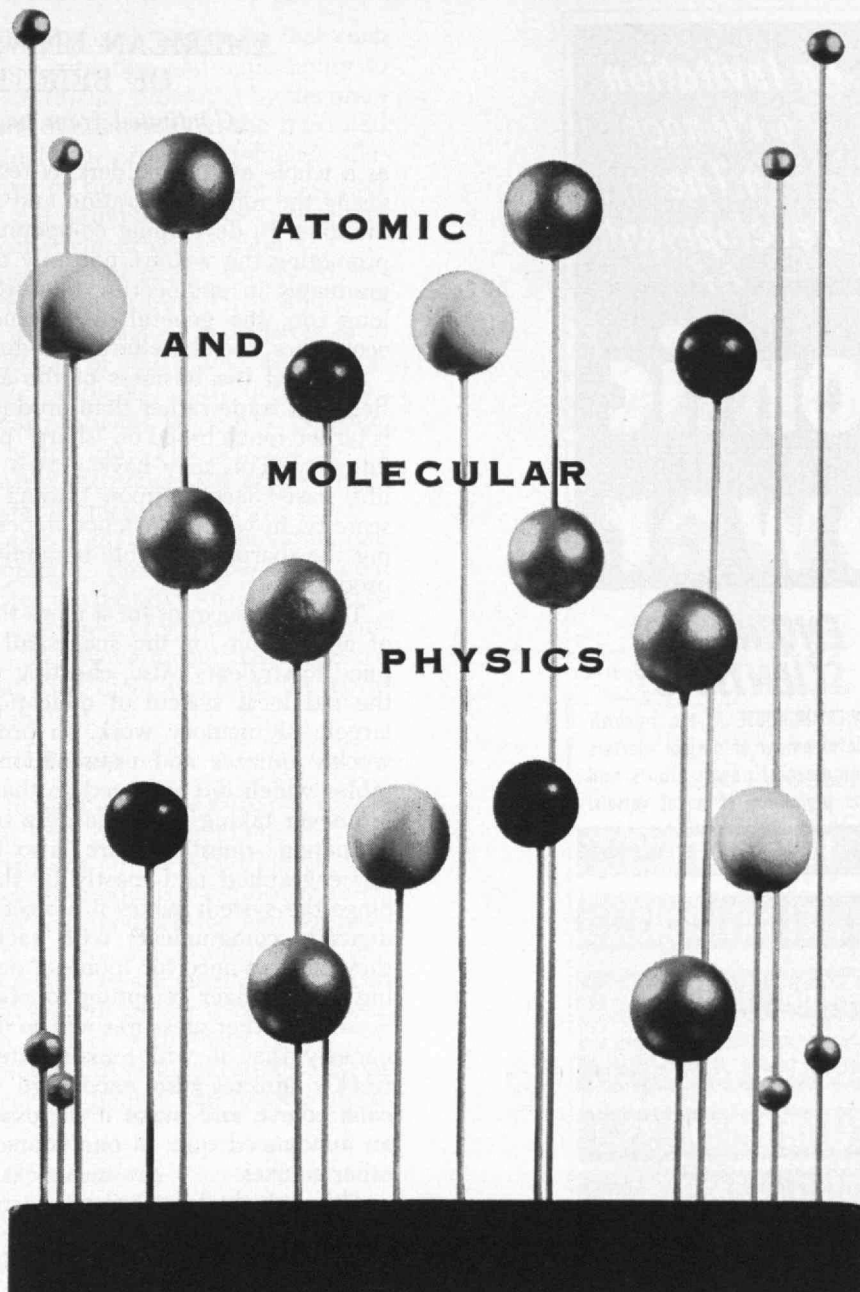
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(Continued from page 206)

as a whole as stockholders, is responsible for supervising the routine operation and maintenance of the building. In developing co-operation we feel we are promoting the welfare not only of our students and graduates in engineering ventures but also, in the long run, the general development of the area in economics, social welfare, and government.

Much of the business of the area, particularly in Beirut, is trade rather than production and the trade is far too much based on "sharp" practices rather than integrity. This may have grown out of centuries of life, based largely upon trading in an economy of scarcity, in which existence depended more on driving the sharpest possible bargain than on individual production.

This may account for a more than normal attitude of admiration for the successful cheater when applied to students. Also, cheating was encouraged by the old local system of education which consisted largely of memory work. In promoting honesty in weekly quizzes and examinations we use drafting tables which are arranged so that adjacent students are never taking the same quiz or examination. Examination questions are also almost invariably mimeographed and mostly of the open-book type. Since the system makes it almost impossible for students to communicate with each other, and since they have no need for "ponies," our students are finding it no longer tempting to cheat. We hope that these and other measures will so develop the habit of honesty that it will remain after graduation. The weekly quizzes also encourage sustained effort in each course and make it impossible to prepare for an announced quiz in one course to the neglect of other courses.

Although the language of instruction is English all Arabic speaking students divide their time in the cultural sequence between English and Arabic discussion and their papers and reports in this sequence are required in both English and Arabic so that graduates will not lose contact with their people and will be able to communicate with them with facility.

Creative individuality is promoted by small classes of not more than 25 students. Although there may be one joint lecture each week to the several sections taking one course, there are at least as many recita-

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tion-discussion periods for each section so that each student gets individual attention and opportunity to express himself. This is further promoted by the practice of comprehensive examinations in the third and fourth years and a final year project to which is allocated about one third of the time of the final year and which requires the individual investigation and solution of a practical engineering problem.

Throughout the program of study, we try to emphasize a co-operative and constructive approach to local conditions and problems. In lectures local material is given by way of illustration as often as possible and class problems and quizzes are oriented toward local problems whenever possible. Each student now works one summer just before graduation on a local construction job or in a local factory or other establishment.

The final year project gives a culminating emphasis on local problems. For example each civil engineering student for the past two years has investigated and planned a section of a proposed Beirut-Damascus Highway. The Government has requested these studies and has used them as a basis for its future plans for development.

Results

It is a little early to attempt to measure our results accurately. Only last year did we graduate the first group which we have seen all the way through. Our curriculum and teaching methods have been undergoing continual study and modification and we have been expanding rapidly. All our graduates are employed in engineering work or are pursuing advanced studies. In both fields they all appear to be successful. We try to maintain contact with them and to encourage their constructive criticism and advice. In this they have been honest and helpful and improvements have resulted.

Observations

The foregoing has been all about one school — its objectives, problems, and plans. Yet it is probably typical of the kinds of things that many American teachers are meeting in the far places of this much smaller world.

Those of us who, as teachers, Point IV workers, or military or state department employees, are privileged to work or teach in foreign countries have an opportunity and a duty. We must recognize and deal with different cultures, often with vastly different histories

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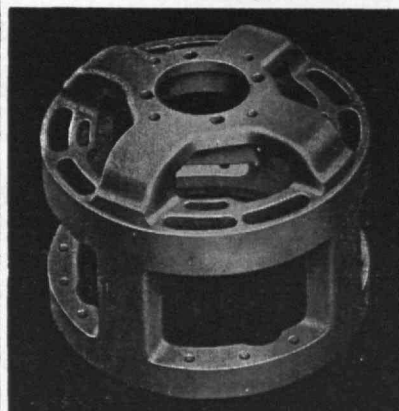
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(Concluded from page 209)

and values. We and our families are guests and have the responsibilities of learning and understanding the background and conditions of living which determine customs, ideas, and action. So far as possible without violating moral principle we must conduct ourselves as will best accomplish our purpose which, although it may be partly selfish, is still probably a more altruistic plan than has ever before been undertaken by any country or nation in the history of the world.

We are welcomed or tolerated, as the case may be, because of our reputation as producers, technologists, and engineers. Our hosts, knowing the value of these as commodities, are willing to trade with us. Even in the countries which we liberated no longer are we and our way of life really understood, accepted, welcomed, or loved. Any such advantages which we may have enjoyed have disappeared in most areas because of unsuitable representatives and inept political action. Now it is essentially our abilities (and money) which are wanted and which are being bought or traded.

Yet we cannot escape recognizing that our engineering and engineering education is not a unit of export commodity. It is in fact only a part of a total organism which might be called the American Way of Life, and without the proper functioning of the other parts of the organism, American engineering and "know how" would almost cease to exist.

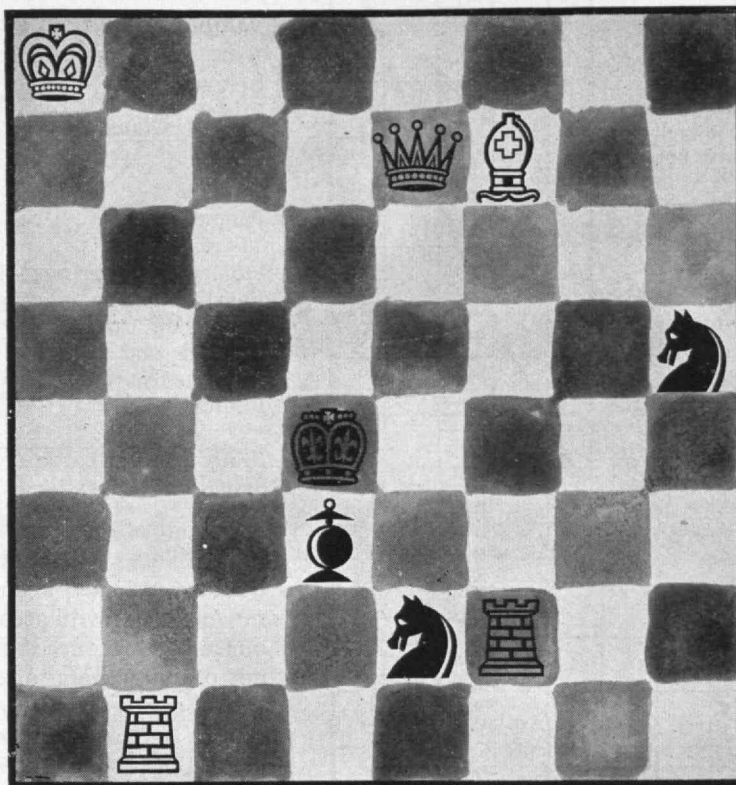
Many countries and people would like to see our engineering and technical knowledge isolated and imported, but this is impossible. To realize our standards and to enjoy the satisfactions of life which they desire (and attribute to our peculiar resources and technical ability) many non-Americans must learn that all the fundamentals and corollaries are required.

American engineering has been developed in an atmosphere of integrity, of private enterprise, and of individual freedom. But freedom is coupled with responsibility — a responsibility to and for the people.

The joy and satisfaction of freedom is readily acknowledged by students and citizens of this and almost any area but the full acceptance of responsibility is a corollary which must be carefully taught. In this connection the study of the professional code of ethics is included in the curriculum and is used as a basis for living and, if necessary, discipline so that when the oath of the engineer is administered at graduation it is already a well-understood guide and should be an integral part of life.

Occasionally there have been charges and proof of graft and other evils in connection with engineering work in America. As a result we may sometimes forget that our vast engineering works can be carried out only because of the honesty and integrity of the overwhelming majority of people; without these our technology and our way of life would collapse.

As American citizens and as teachers we must be honest to admit to our hosts the shortcomings and failures in certain phases of our way of life. But we as teachers must do our best to live up to and hence teach the ideals of American life and a democracy based on responsibility.



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(Concluded from page 193)

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TECHNOLOGY AND THE LIBERAL ARTS

(Continued from page 190)

some way could be found to restore even a part of this source through a more favorable and realistic tax situation, college treasurers might breathe a little easier as they study their forecasts. I cannot help but feel also that the loss to the university world when there is no longer a Harkness, or a Duke, or a Blair will be irreparable. The gifts they made to institutions carried with them a legacy of equal value to the money involved — some of the character and example of the givers.

The third possibility is the consideration of what the educational world itself might do in adapting to the conditions that confront it. In my own opinion, there are a great many changes in the accepted pattern of education that probably will have to be made.

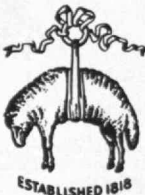
What these will be, I cannot specifically say. As a representative of industry, I might suggest that the educational world survey American industry carefully to see if there are not some industrial practices which might bear transplanting to the educational field, just as so many educational techniques have been adopted by industry. For example, industry has long since learned that profitable operation is most easily obtained when facilities and equipment operate at maximum potential. In the chemical field, many of our plants operate a continuous process,

(Continued on page 216)



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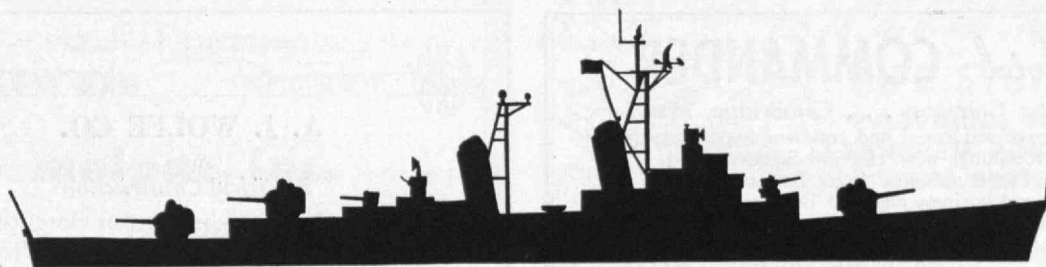
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TECHNOLOGY AND THE LIBERAL ARTS

(Continued from page 214)

and we have learned to adjust schedules of holidays and annual vacations to fit the needs of a plant that never closes down.

Suppose our schools and colleges were to adopt this system? By staggering the vacation period, we would be able to increase substantially the number of students accommodated without an increase of physical facilities. I see no reason why vacations must be confined to the summer season — in industry, we have learned to spread them out over the entire year, and the resort, travel, and recreational industries have now adapted their activities to this year-round principle. Perhaps the schools and colleges could do as well.

I believe that better planning and scheduling in the use of our facilities and equipment, even on existing schedules, would provide a handsome return for the effort. While I deplore the suggestion of mass production as applied to education, there is no doubt about the fact that some of the methods which have proved so successful in that area could be studied with some profit by our educational administrators. My own observation is that there are many instances of a laboratory or a shop which is overcrowded and inadequate in the afternoon, yet empty and silent for a good part of the morning.

There are other industrial practices which might well be examined. One is what we might call pricing policy. Like business, the universities have always tried commendably to keep the costs of an education down to reasonable limits so that more people could avail themselves of the opportunity. To this end, en-

dowment income has usually been used to reduce tuition costs for everyone. Lower prices are indeed a laudable aim in business or college, but losing money is fatal for either. I wonder if we are not going to find that selling a \$2,000 college year for \$1,000 to anyone, regardless of ability to pay, is poor economics in the end and may ultimately deprive more people of education than it gives.

As a university trustee, I am glad to see that qualified students who can afford nothing, pay nothing, but I fail to see where an automatic subsidy for everyone can be justified.

Speaking of industrial practices, there is one other which should be included, although it is not related directly to the relief of the university's financial problems. There is no doubt that rising costs have added to the financial difficulties, and that this has had a serious effect on the vital question of faculty salaries. Industry, too, has had the problem of increasing costs, but it has long since learned that an organization is no better than its people and that only by providing adequate incentives can it attract and hold high-caliber personnel. The universities must inevitably follow, and I don't think there is any doubt that university pay scales must be raised. There is a good sales argument here, I suggest, for educators raising funds among industries: If there is anything industrial management knows, it is that good men come high, whatever the form of compensation. It could hardly argue that a different principle should apply in the universities.

In facing all these problems, education and industry need now, more than ever before, to maintain a close association. My suggestion is that all of us take immediate steps to look at our problems from a common point of view. One of the difficulties is that cor-

(Concluded on page 218)

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TECHNOLOGY AND THE LIBERAL ARTS

(Concluded from page 216)

porations, as well as our larger universities, have become national rather than purely local in scope and may have lost the intimate, personal relationships which prevailed in earlier times. The tendency is, therefore, to view problems in their very broadest terms and forget that the national scene is simply a projection of a number of local scenes and that problems can be understood best at closest range.

To industry people, I suggest that, while we are considering the problems of the universities generally, we address ourselves to the problems of some particular university specifically. If every member of industrial management would become sincerely interested in the problems of some university, either in his home town, his home state, or in one for which he has some special affection, we would have a practical and immediate approach to joint understanding.

To university administration, I suggest that the aid and the personal counsel of industrial leaders in your communities be actively solicited, not simply as contributors, but as active participants. I think there is much that each of us could learn from each other to our mutual advantage.

We need desperately to broaden our common understanding and common objectives. The future of both industry and education may very well be determined by how closely the two can work out their problems together. The need for co-operation is greater than ever before. I am confident that if we work together, we will find reasonable and satisfactory solutions to our mutual problems.

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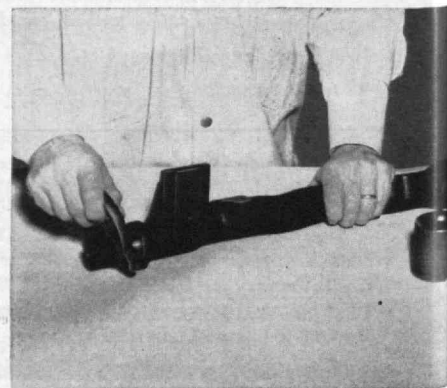


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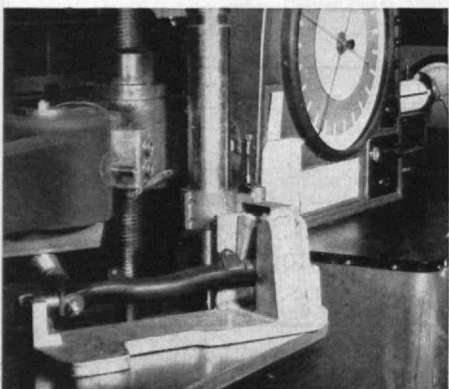
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ATLANTA, GA.

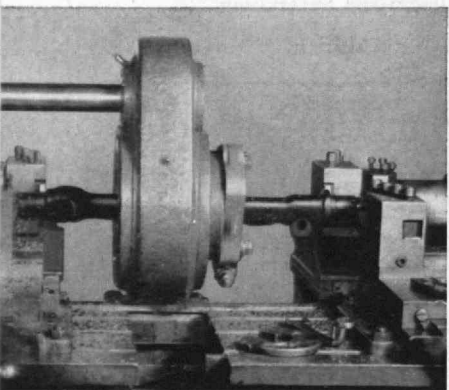
GREENSBORO, N. C.



Use of gauges in final inspection permits high standards of uniformity and quality to



Iron and sample castings are checked daily in Draper Laboratories to meet rigid specifications.



Precision machine tools enable close tolerances to be held.

Alumni AND Officers IN THE News

Honorary Degrees

ROBERT E. WILSON'16, Chairman of the Board, Standard Oil Company (Indiana) and GEORGE R. HARRISON, Dean of the School of Science have recently received honorary doctoral degrees from Drexel Institute of Technology.

JAMES R. KILLIAN, JR.'26, President of M.I.T. has been awarded an honorary degree of doctor of laws by Tufts University.

Citations and Medals

RAYMOND STEVENS'17, Senior Vice-president of Arthur D. Little, Incorporated, consultants and engineers of Cambridge, Mass., has been unanimously chosen as the 1956 recipient of the Gold Medal of the American Institute of Engineers. The award is made in recognition of Mr. Stevens' "contributions to the wider understanding of essential procedures for the management and operation of industrial research."

JOSEPH R. MAHAN'20, Director of Engineering for the National Supply Company has been awarded a Certificate of Appreciation by the American Petroleum Institute for 1955. He was one of seven petroleum industry leaders who was so honored.

ROBERT C. DEAN, JR.'48, Assistant Professor of Mechanical Engineering at M.I.T. is this year's recipient of the Pi Tau Sigma Gold Medal. Pi Tau Sigma is a national honorary mechanical engineering fraternity. The medal is awarded annually to the outstanding graduate of 10 years from college. Professor Dean is an associate member of ASME, and is the faculty adviser of the ASME student branch at M.I.T. He is also a member of the Institute of Aeronautical Sciences, and of the honorary engineering fraternities Pi Tau Sigma and Tau Beta Pi.

WILBERT E. CHOPE'29 has received the award of "Outstanding Young Electrical Engineer for 1955." The award is made annually to the young engineer of outstanding accomplishment who is not older than 35 years of age and not out of school more than 10 years. Mr. Chope received a bachelor of science degree from Ohio State and later a master of science degree in electrical engineering from M.I.T.

Newcomen Society Honors

J. R. NEWELL'34 spoke on the life of his distinguished father, WILLIAM STARK NEWELL'99 formerly a member of the M.I.T. Corporation and President of the Bath Iron Works, Bath, Me., from 1927 until his death in 1954. The memory of the elder Newell was honored on November 30 in an address delivered at the "1955 Maine Luncheon" of the Newcomen Society in North America.

American Newcomen shares with the

shipbuilding industry in the United States, a recognition that William Stark Newell was one of the ablest shipbuilders that America ever has produced. He built vessels for the U.S. Navy, for His Britannic Majesty's Government of the Republic of France, and for the American Merchant Marines. No finer contribution of ocean tonnage was built than that by this master shipbuilder of Maine.

Honors and Awards

VANNEVAR BUSH'16 has been honored by the Department of Geology and Geophysics of M.I.T. and the Carnegie Institution who are cooperating in the award of predoctoral fellowships in theoretical and experimental geology. The awards are to be known as the Vannevar Bush fellowships in earth sciences.

ROBERT B. MACMULLIN'19, founder and senior partner of R. B. MacMullin Associates, Niagara Falls, has been selected as winner of the fourth annual Achievement Award of the Western New York Section of the American Institute of Chemical Engineers. The award is made to an outstanding chemical engineer in recognition of contributions to the profession and service to the organization. Mr. MacMullin is author of more than 50 patents in applied chemistry.

Election News Flashes

PHILIP A. RUSSELL'14 has been designated a second vice-president of Mutual Life Insurance Company of New York.

WALTER G. WHITMAN'17, Head of the Department of Chemical Engineering at M.I.T., has been elected president of the American Institute of Chemical Engineers.

FRED J. GIVEN'19 has been elected a vice-president of the Sandia Corporation.

S. P. COLEMAN'21 has been named a vice-president of the Standard Oil Company of New Jersey.

HARLAND C. FORBES'23 is now the president of the Consolidated Edison Company of New York.

E. M. TITTMAN'29 has been elected president and chief executive officer of the Southern Peru Copper Corporation.

ROBERT T. ARMSTRONG'30 has been elected vice-president-technical director of Celanese Corporation of America.

OLIVER H. FULTON'40 has been appointed assistant to the president of the Underwood Corporation.

WARREN E. FOSTER'43 is now vice-president of Cornwall and Patterson Company of Bridgeport, Conn.

Obituary

JAMES L. KIMBALL'85, October 21.

WALTER E. SILSBEE'88, November 9.

EDWIN S. PILLSBURY'98, September 10.

MRS. HEBERT W. MACOUN'90.

ALDEN P. MARSH'92, June 1955.

PERCIVAL B. METCALF'92, November 15.*

CHARLES H. WRAY'92, July 30.*

LEONARD B. BUCHANAN'93, November 9.

WM. W. PEABODY'93, November 7.

CARL H. CLARK'95, November 5.*

RICHARD H. RICH'95, September 18.

HENRY A. SHERMAN'96, July 14.*

HENRY A. WATERMAN'96, October 25.*

MINOT A. BRIDGHAM'97, October 25.*

ROGER F. HOSFORD'97, November 13.*

ARVILLE C. REDMAN'00, October 17.*

MRS. LEWIS S. THORPE'00, October 12.*

CHARLES A. RECORD'01, May 26.

JOSEPH E. PHILBRICK'01, August 1955.

FRANK D. ALLEN'02, September 30.

CLAUDE H. COOPER'03, July 30.

HERMAN O. BLATT'04, November 11.*

W. S. DILLON'04, November 23.*

JULIUS L. HECHT'04, June 9.*

A. P. GERRY'05, October 15.*

JAMES A. NEWLANDS'05, December 2.*

ALBERT A. BLODGETT'06, October 25.*

JOSEPH H. FHEEMSTER'06, October 27.

ALBERT W. HEMPHILL'06, November 12.*

CLARENCE N. STONE'06.*

WENDELL R. TERRELL'06.*

JULIO MADERO'07.

BENJAMIN C. BAKER'08, December 3.

EDWARD A. PLUMER'08, October 31.*

JOHN LARNED'08, December 3.*

FRANCIS V. REYBURN'08, March 24.

BRAINERD DYER'09, March 6.*

EDWARD J. HOOPER'09, November 2.

FREDERIC K. CASTELHUN'10, Nov. 24.*

RICHARD B. FISHER'10, November 15.*

STUART SHEDDON'10, December 12.*

N. SIDNEY MARSTON'11, November 20.*

HAROLD GREENLEAF'12, November 6.

HERBERT A. SWEET'12, September 25.*

PAUL C. WARNER'13, July 28.*

A. HAMBURG'15, November 10.*

ALBERT E. KLEINERT, JR.'16, October 23.*

ALFRED K. ALTHOUSE'17, November 6.

ENSLO S. DIXON'18, June 10.

J. HANLEY'18, December 8.*

ROBERT B. CHENEY'20, August 16.

FREDERICK S. BRITTON'20, November 16.*

GEORGE O. HARTMAN'21, October 9.

HAROLD H. LOCKEY'21, May 24.*

ROY W. EWERTZ'22, October 19.*

DALE L. MAFFITT'22, October 25.*

ROBERT M. CARSWELL'23, September 28.*

HAROLD H. NILES'23, October 28.

JOHN H. ZANE'23, July 23.

PHILIP DOANE'24, September 27.*

GORDON M. MORRISON'24, December.

CHARLES A. GIBLIN'25, October 17.*

S. CRAWFORD ROBINSON'28, January 25.*

ROBERT C. WILSON'28, October 11.

ROBERT K. PHELAN'30, November 17.*

DAVID L. LOETSCHER'32, August 13.

JOHN D. FISHER, JR.'36, June 24.*

GRAFTON B. PERKINS'36, November 19.*

JOHN MERRILL'36, October.

DANIEL TOWER'37, November 4.

NOEL H. ELLIS'39, July 20.

DONALD G. JACKSON'43, October 6.*

FRANCISCO ACEVEDO-QUINTANA'46-6,

June 10.

HARVEY H. SALWEN'48, November 4.*

GENE R. GRAHAM'51, September 6.

* Further information in Class Notes.

News FROM THE Clubs AND Classes

CLUB NOTES

Birmingham

Professor Thomas F. Jones, Jr.'40, of the Department of Electrical Engineering, was guest of the Birmingham Club at a dinner meeting December 1, at The Club. Terminating a tour through Georgia and Alabama as emissary of the admissions office at M.I.T., Dr. Jones' experiences and his observations on the teacher's outlook formed the background of his very interesting talk, which touched on both undergraduate and research programs. Local members of the Educational Council, most of whom accompanied Dr. Jones on his visits to local high schools the following day, are George Fertig'24, Regional Chairman, and President of the M.I.T. Club of Birmingham, Charles B. Gamble, Jr.'34, Laurence D. Luey'29, Edwin B. Miller, Jr.'50, James B. Preston'48, Nelson Smith'35, Raymond E. Strickland, Jr.'38 and David Thurlow'41. Those who have worked with the Educational Council in this area find a keen interest in M.I.T. on the part of junior and senior year high school students, and a desire for knowledge of the various departments which is most successfully met through a visit by some well qualified representative of the Institute, such as Dr. Jones.

Others attending the Birmingham Club dinner meeting were James G. Creveling'25, Douglas F. Elliott'24, Hubert P. Foreman'54, William H. Hassinger'27, Lawrence T. Haugen'23, Kenneth M. McDonald'24, Julian B. McFarland'22, John W. Powers, Jr.'33, Merrill E. Pratt'16, Joseph G. Reid'08, A. G. Smith'29, F. C. Weiss'13, John H. Wood'34, George B. Bradshaw'03, Arthur Wake-man'21, Ted Randolph'44, Thatcher H. Mawson'27 and Julian E. Adler'13. — LAURENCE D. LUEY, *Secretary*, Southern Natural Gas Company, Watts Building, Birmingham, Ala.

Cincinnati

"London and Environs" was the program presented by Mr. James M. Ewell'37 for the members of the M.I.T. Club of Cincinnati and their guests on November 17, 1955. The occasion was the Fall Dinner and Ladies' Night held at the Kenwood Country Club.

The landscape, architecture and pagentry of London, England, and vicinity were well presented in an edited film produced by our speaker and presented with a most fascinating commentary. Included in the program were several scenes of the Coronation of Queen Elizabeth II. The entertaining movie

was made by Mr. and Mrs. Ewell during the 1951-1953 period when Mr. Ewell was Director of Manufacture of the Thomas Hedley Company, which is a wholly owned subsidiary of the Procter and Gamble Company. Mr. and Mrs. Ewell are now residing in Cincinnati where he is vice-president of manufacture of the Procter and Gamble Company.

We are pleased to note that Professor James B. Reswick'43 of the Mechanical Engineering Department of the Institute was present as the guest of Walter G. Thomas'39.

The officers of the Club are pleased with the response of the membership to this program and are encouraged to continue with the full schedule which we have planned for the 1955-56 season. We again encourage all alumni in the Cincinnati area who are not now on our mailing list to advise the secretary of their addresses. — GERALD S. BURNS, *Secretary*, 2334 Kemper Lane, Cincinnati 6, Ohio.

Fairfield County

The fall dinner meeting was held on November 30 at the Clam Box, Westport, Conn., with 27 Alumni present. The speaker for the evening was Elmer A. Schwartz, President, Northeastern Steel Corporation, Bridgeport, Conn., who discussed the operations of Northeastern Steel Corporation and the national steel situation. — D. W. WATERMAN, *Secretary*, 99 Flat Rock Road, Easton, Conn.

South Florida

The Secretary attended the 45th reunion of his class at Chatham, Mass., last June and then went to Boston for Alumni Day as the guest of Professor Babcock. On his return to Florida he stopped over in Washington a week with one of his sons, and was very busy visiting friends and attending meetings of organizations there to which he still belongs. He was a dinner guest at the home of V. T. H. Bien, who had been his roommate at the reunion. All travel was by air.

Despite the fact that many Florida residents go north in the summer (though for what reason the Secretary does not know; it doesn't get as hot in Florida as it does in Washington), the South Florida Club repeated its successful program of last year by attending the Pop Concert in the Miami Beach Auditorium on July 10, and holding an all-day social gathering of members and their families at the Kenilworth Hotel in Bal Harbour on August 27; also having an all-day picnic at Matheson Hammock on October 23.

A dinner meeting was held December 1 in Betty's Restaurant at which Joe Jefferson, Assistant Director of Admissions

at M.I.T., was the guest speaker. Mr. Jefferson was on a tour of South Florida for conferences with high school students and teachers to explain the requirements for admission to the Institute. He spoke of the aid provided by scholarship funds to capable students who are financially unable to afford a course at M.I.T., and cited instances of some who were denied such aid but were so determined to get this sort of an education that they came anyway, and many of them proved to be so outstanding that they were subsequently given as much aid as possible. — KENNETH P. ARMSTRONG, *Secretary*, 145 Sesame Street, Opa-locka, Fla.

Hartford

The New Haven Club were our genial hosts last June at the Branford Yacht Club, where we held a joint annual meeting. The following were elected officers at that affair: President, Marshall J. McGuire; Vice-president, Walter S. Wojtczak; Secretary, Richard M. Feingold; and Treasurer, Robert S. Loomis. Although the weather was rainy, the members and their wives had a grand time both at the dinner and later on when door prizes were awarded to almost everybody.

Our first meeting of this season was held on December 1, with an attendance of about thirty. The speaker was L. Wayne Furtney of the local investment house of Putnam and Company, on the topic, "The Advantages of Owning Good Common Stock and How to Select Them."

A survey of the Club information cards shows that a large percentage of alumni in this area are connected with the United Aircraft Corporation. Not to be outdone, however, are the insurance gang, who are very strong in this insurance conscious city. The net result is that in order to get a big turnout at meetings the topic of the evening has to be about aircraft insurance. This is by way of announcement, therefore, that the next meeting will feature the presidents of all the companies in the area where Tech men are employed, all of whom will be looking for their men. — RICHARD M. FEINGOLD, *Secretary*, 49 Pearl Street, Hartford 3, Conn.

Milwaukee

Leonard J. Linde, Director of Electrical Engineering of the Allis-Chalmers Manufacturing Company, was guest speaker at the first dinner meeting of the year of the Club on Thursday, November 17, at the University Club in Milwaukee. Mr. Linde, who has traveled extensively in Europe for his company during the past five years, addressed the club on "European Engineering and Industry." He was a recipient of the Charles A. Coffin award for outstanding contributions in

electrical development and design in 1935 and 1940, and he holds many patents for developments in power circuit breakers and switchgear. Mr. Linde is the father of Robert N. Linde '56. The Club was given a review by Mr. Linde of the re-establishment of the industrial community in various European countries. An excellent collection of color slides was used to illustrate the progress in industrial and commercial plant design and to provide a travelogue.

The meeting was attended by J. B. Ballard '35, R. H. Becker '22, M. F. Biancardi '40, R. E. Boeck '28, W. R. Bohlman '49, F. E. Briber, Jr. '43, L. O. French '10, R. J. Gillmeister '49, R. Greenwalt '51, F. E. Hamilton '07, A. G. Hall '25, L. J. D. Healy '09, H. E. Koch '22, P. A. Koehring '49, W. H. Lane '52, H. S. Lauson '53, C. E. Meyer '36, J. C. Murphy '51, H. H. Rogers '53, W. H. Schield, Jr. '46, C. L. Sollenberger '44, E. E. Staples '26, E. J. Van Patten '24, and six guests. — WILLIAM R. BOHLMAN, *Secretary*, 4675 N. 104th Street, Wauwatosa, Wisc.

Northern New Jersey

The late fall meeting of the M.I.T. Club of Northern New Jersey was held in Hotel Suburban, East Orange, on Monday, December 5. A fine crowd of Alumni attended, much thanks due to Ken Radimer '42 and his Publicity Committee.

A brief business meeting with committee reports, was conducted by President Russ Westerhoff '27. The high point was the adoption of the changes to the Club's constitution.

The feature of the evening was an interesting and enlightening discussion of the development and use of Reaction Motors, by Messrs. Willard C. Kimm (Director of Information Service) and Wilbert R. Brown (Senior Project Engineer) of Reaction Motors, Incorporated, in Rockaway, N. J. It was mentioned that problems of rocketry involve all the sciences, due to the myriad problems encountered. These include handling oxygen at minus 300 degrees, next to flames at plus 3600 degrees; pumping and handling extremely cold or corrosive liquids; devising new propellents, shell materials, control mechanisms, etc.

Two interesting films were shown, one taking us from ancient Chinese fizzling firecrackers, through $F=ma$, to the latest in guided missiles and rocket-driven manned vehicles. The other film described the application of tiny Reaction Motor boosters to give emergency power to helicopters.

The meeting was followed by refreshments in a get-together arranged by Jim Shyne '43 and his House Committee. — STUART G. STEARNS, *Secretary*, 25 Elmwood Place, Short Hills, N. J. JEROME E. SALNY, *Assistant Secretary*, Egbert Hill, Morristown, N. J.

M.I.T. Club of New York

Alumnae of Greater New York

On the evening of November 17 the headquarters of the M.I.T. Club of New York was reserved for ladies only. A meeting of the women Alumnae of M.I.T.

who live in the metropolitan area of New York City was called and the response was enthusiastic. We were all impressed with the conviviality and intimacy that the room in the Hotel Chatham lent to the occasion.

Joseph Conrad, the permanent secretary of the New York Club, addressed the group. He gave us a brief history of the Club and discussed future plans to expand the quarters and attract as many people as possible to the Club with reasonable prices for membership and food.

We enjoyed this talk but took exception to the tendency of our male counterparts to either exclude us from their activities or include us only along with the wives of the male Alumni. We feel we should meet with all Alumni on a professional basis and that as members of the organization we shouldn't be relegated to a "ladies invited" category.

One of the most interesting events of the evening was a "round robin" survey of those present in terms of years at M.I.T., specialty, further education and present occupation. Specialties varied from architecture, electro-chemistry, electrical engineering, bio-chemistry, physical chemistry, mathematics and economics. Some of those present went on for further study after graduating from the Institute. Dr. Frances Karlan '42 (VII) is now a dentist and works for the Metropolitan Life Insurance Company. Miss Jeanne Pearlson '40 (XVIII) studied further at Radcliffe and is now employed by Allied Chemical and Dye Corporation. Mrs. Miriam W. Leff '45 (V) received her law degree from Columbia University and is now practicing. Mrs. Leff has two sons. Dr. Phyllis Fox '49 (XVIII) is working in atomic energy at New York University. Miss Elizabeth Dolan '34 (IV) is an office manager and trouble shooter for H. J. Baker and Brothers. Dr. Cecily C. Selby '50 (VII) who has three children, now works at the Cornell Medical School. Mrs. Martha Munzer '22 (XIV) had the most grandchildren of all those present, to wit: — four. Mrs. Munzer has been teaching chemistry at the Fieldston School in Riverdale, N. Y., for many years. Among those present, Mrs. Thomas J. Clough '32 (VII) had the most children — five. Mrs. Anita Krause '48 (VI) has retired from Sperry's to care for her baby. Mrs. Ruth G. Shaeffer '46 (XIV) is now working in industrial relations. Mrs. Elizabeth R. Everett '30 (IV), who has one son, is active in church affairs. Mrs. Gretchen Palmer '18 (IXA) is active in the Episcopal Church in Norwalk, Conn. Dr. Mary Louise Curley '46 (XIV) is an economist with Scudder Stevens Clark. Mrs. Catherine Sponable '46 (V) strayed farthest from her field. She now studies ballet. Miss Kathleen Black '50 (X) has recently recovered from an operation and is in the market for a new job. Also present were Mrs. Maria Bentel '51 (IVA) and Mrs. Roberta Halligan '28 (VII).

The meeting ended with coffee and cake and with the wish that we would meet again soon, learn more about each other and would meet to go to the regular Club activities.

Our thanks to Elizabeth Dolan, the chairman of our group, who worked so

hard to arrange this meeting. — MIRIAM LEFF, *Secretary*, 254 West 54th Street, New York 19, N. Y.

Rochester

At our last meeting on November 16 our Club was extremely fortunate in having Professor Walter G. Whitman address us on the topic "Atoms for Peace." Professor Whitman as Secretary General of the Geneva Conference on "The Peaceful Uses of Atomic Energy," came to Rochester as a United Nations representative. He addressed a joint meeting of the Rochester Association of the United Nations, Rochester Section of the American Institute of Chemical Engineers, and the M.I.T. Club of Rochester. Because of the outstanding nature of this meeting ladies were invited and a dinner in honor of Professor Whitman was held prior to the talk.

Professor Whitman described for us the mechanics of setting up this conference, his associations with the Russian delegates, and the ultimate success of the meeting. It was indeed refreshing to learn that in one endeavor, at least, it was possible to get 72 nations of the world together and have a complete free and unrestricted exchange of information.

Our next meeting was the Annual Christmas luncheon which was held during the week of Christmas vacation. It is our custom each year at that time to invite those students from this area now at the Institute to join us. This year there are some 45 boys from the area attending M.I.T. — JAMES K. LITWITZ, *Secretary*, 191 Rogers Parkway, Rochester 17, N.Y., ARNOLD MACKINTOSH JR., *Assistant Secretary*, 165 Glen Haven Road, Rochester, N.Y.

East Tennessee

An air-minded meeting was called at the University of Tennessee Cafeteria on December 5. Professor Robert L. Halfman was scheduled to be in Knoxville to interview high school students and was intending to meet with us, but this aeronautical engineer couldn't manage to get off the ground at New York until about the time of the meeting, so we had to do without him. The other air feature was the presentation of a film "Flight Refueling in the Jet Age," otherwise known as "Range Unlimited," which was lent to us by courtesy of Flight Refueling, Inc., of Baltimore.

The club received with regret the news that our president, A. Carleton Jealous '42, had been transferred to New York. Past President George P. Palo '28 led the meeting. Elected to fill the office of President was Dr. Robert D. Birkhoff '45, formerly of the Physics Department at U. of T. and now in the Health Physics Division at the Oak Ridge National Laboratory.

Present were Dr. and Mrs. Birkhoff, William H. Caffey, Jr. '30, Mr. and Mrs. Howard P. Emerson '28, Mr. and Mrs. Robert Forbes '33, James A. Hurst '53, Archibald H. Kinghorn '20, Gilbert E. Klein '47, William Nixon '31, Mr. and Mrs. Palo, and Mr. and Mrs. Joseph D. Stout '47 — ROBERT FORBES, *Secretary*, TVA 704 Union Building, Knoxville, Tenn.

CLASS NOTES

• 1885 •

James L. Kimball died in Florida, October 21, 1955. Mr. Kimball was born in Westford, Mass., on July 8, 1862. The family moved to Mobile, Alabama, when Mr. Kimball was an infant, but the Civil War broke out when he was about four years old and the family returned to Massachusetts. He attended Westford Academy and after graduation went to the Bryant and Stratton Business College in Boston which was followed by a few months at the Mechanic Arts School. In 1881 he entered M.I.T. and took a two year course in mechanics. He worked for the Walworth Manufacturing Company for a year and then returned to M.I.T. for a year's electrical course.

For a year he was with the Thompson Houston Electrical Company of Lynn, Massachusetts, first in the lighting department, then for four years in the Electric Railway Department installing motor generators. He started the latter system in many cities. He then went with the Julian Storage Battery Company and later was assistant to their agent in Boston.

Mr. Kimball superintended the installation of the first batteries for lighting trains on the Boston and Albany railroad and also the first electrical battery operating on street cars in Boston. He was interested in starting a small central lighting plant in Roxbury, Massachusetts, was stopped by the Edison Company because no franchise was obtainable.

One of Mr. Kimball's interesting ventures was the purchase of old sets of electric accumulators, and the Edison Company employed him to transport the batteries to the rear of homes when parties were given. The Electrical Company would string incandescent lights and make wiring connections to the batteries.

Mr. Kimball was the K of "K.W." ceiling rosettes, of which there were many thousands used, and he was also interested in the Andrew and Spencer Balancing and Coil Winding Company to prevent sparking of electrical generators due to armature reaction. He built an experimental dynamo and later was the New England Agent for the Ridgway Dynamo and Engine Company which built dynamos on a royalty basis. — ARTHUR K. HUNT, *Secretary*, Longwood Towers, Brookline 46, Mass.

• 1890 •

Charles Sherman sent in a copy of a legal notice clipped from the Belmont, Mass., *Citizen* which indicates that our classmate, Martha R. Mann, passed away on November 1, 1955. She took Course VII, but we have no record of the work she did after leaving M.I.T. or when she married Herbert W. Magoun. According to our files no replies have ever been received to Class notices. The Hayden Medal remains, at the time of writing (December 6, 1955), in the hands of Doctor Anderson, awaiting the return of Mrs. Harold L. Hazen. — GEORGE A.

PACKARD, *Secretary*, 25 Avon St., Wakefield, Mass. CHARLES W. SHERMAN, *Assistant Secretary*, 36 Myrtle St., Belmont, Mass.

• 1891 •

I received this letter from our former secretary. It was good news to learn that he was in good health and so cheerful in spite of the tragic situation he describes: "I was much pleased yesterday to receive your note inquiring as to the condition of my health. As I understand the meaning of health, I can repeat that it is good! This is confirmed by my doctor on his weekly visits. I haven't an ache or a pain and have no worry about my health, but I am still quite helpless and limited in my activities owing to the paralytic shock I had a year ago last summer. I have recovered movement of my left arm and hand but haven't much strength in them. The worst thing was the infection in my foot which necessitated the amputation of my left leg above the knee. That is all I want to say about my condition. I have to be helped into a wheel chair to get out around the yard, and once or twice a week I have an automobile ride to inspect the extensive construction projects in connection with raising the railroad tracks and the by-pass road being built to relieve traffic through the center of town. This road passes through part of my property and has required the tearing down of one of my houses, but not the one I am living in — thank heaven! This construction involves some most unusual features which provide me with much entertainment, for which I am most appreciative. With best regards to yourself, Harry Young, and any of the Class of '91 you chance to see, I remain, Yours very truly, (signed) Frank Howard. P.S. I have, at my house, a sizeable box of papers and pictures which had accumulated during Henry Fiske's period as secretary of the class and some more recent ones. I don't know what disposition should be made of these. I can have them delivered to you or Harry Young if you so decide." Frank may be addressed at 132 Washington Street, Winchester, Massachusetts. I am sure he would appreciate letters from his classmates, and so would I. — GORHAM DANA, *Secretary*, 44 Edge Hill Road, Brookline 46, Mass.

• 1892 •

The secretary regrets to report the death of two of our classmates.

Percival B. Metcalf died at his home in Winchester, Mass., on November 15, 1955 at the age of eighty-five. He was with us for about one year but left the Institute before selecting a course. The Secretary is indebted to an extract in his hometown paper for the following account of his career. "He was a former chairman of the board of assessors, and served as chairman of the finance board committee. He was former past master of William Parkman Lodge, past commander of the St. Bernard Commandery, past high priest of the Woburn Royal Arch Chapter, and a life member of St. Andrews Chapter. Until his retirement in 1950, he had been president of the Tracy Music Library in Boston. He was formerly affiliated with the D'Oyly-Carte Company in England,

and was a leading authority on Gilbert and Sullivan Operas. He leaves his wife, Mrs. Ruth Worthington Metcalf, and a brother, Robert Metcalf."

We have received a notice that Charles H. Wray died at his home in Marshall, Michigan. He was registered with us in the course in architecture but the only information we have regarding his career is that he retired from active work some four years ago.

Hope to meet some of the members of the Class who have not left for winter quarters, at the Alumni Meeting this coming February. — CHARLES E. FULLER, *Secretary*, Box 144, Wellesley, Mass.

• 1893 •

Just before Class Notes were due for the February issue of The Review, we received word that William W. Peabody of Holden died on November 7. William Peabody spent a large part of his life in water supply work, for the New York Water Supply, the Scituate Dam in Providence and, from 1928 until his retirement in 1944, with the Metropolitan District Water Supply Commission as district engineer. William Peabody was the husband of the late Lily A. S. (Brown) Peabody. He leaves two sons, Walter R. Peabody of Flemington, N. J., and Arthur W. Peabody of Holden; a daughter, Mary A., wife of A. Wallace Cove of Holden; eight grandchildren and seven great grandchildren. — GEORGE B. GLIDDEN, *Secretary*; GERTRUDE B. CURRIE, *Assistant Secretary*, c/o Fay, Spofford and Thordike, 11 Beacon Street, Boston 8, Mass.

• 1895 •

The secretary's records indicate there are 43 members of the class of 1895 still living, and located in 13 states. Distribution covers Mass. 19 (nine in Boston and vicinity); N.Y. seven; Calif. four; N.J.; Va.; and Texas have two each; one each in Conn.; Ky.; Maine; Mich.; N.H.; Penna.; and Rhode Island. Of the 43 survivors, 31 received their S.B. with the class; two were registered for four years; two for three years; five for two years; and three for one year. This chronology is prompted by the passing of another classmate.

We are advised from a clipping from the *Patriot-Ledger*, Quincy, Mass., that Carl Herbert Clark, XIII, passed on November 5, 1955, at his home 28 Waterston Ave., Wollaston, Mass. Clark established the firm of Clark and Church as marine surveyor and insurance adjusters, with offices at 79 Milk Street, Boston. He also founded Clark-Wichert, Incorporated of Boston to handle insurance loss adjustments. As a naval architect he was found active in sailing. His wife Mrs. Ida A. Clark survives. — LUTHER K. YODER, *Secretary*, 69 Pleasant Street, Ayer, Mass.

• 1896 •

As we are compiling these notes today, our "Old Reliable" Fred Damon is in the hospital recovering from pneumonia. Added to this there are other complications which will prolong his stay in the hospital. Also, Johnnie Rockwell is under his doctor's care with a respiratory infection which will keep him in bed for

awhile. In the January issue, we reported the death of Lt. Col. Henry H. Kimball. This was an error; the name should have been Henry H. Sheridan. We have just received notice of the death of Henry A. Sherman, 20 Manthorne Rd., West Roxbury 32, Mass., on July 14, 1955. We have also received an article from the Boston, Mass., *Globe* regarding the death of Henry A. Waterman. "Henry A. Waterman, 83, retired mechanical engineer, former member of the Nova Scotia Legislature and one time executive of United States manufacturing companies, died on October 25, 1955.

"Born in Yarmouth, N.S., he moved to Massachusetts where he graduated from Malden High School and M.I.T."

After a varied career, Waterman retired in 1919. He is survived by his widow. — JOHN A. ROCKWELL, *Secretary*, 24 Garden St., Cambridge 38, Mass. FREDERICK W. DAMON, *Assistant Secretary*, Commander Hotel, Cambridge, Mass.

• 1897 •

Please correct an error in our November issue. Professor Alpheus G. Woodman is still living at 367 School Street, Watertown, Massachusetts, where he has lived for fifty years.

From the *New York Times*: "Glen Ridge, N.J., Nov. 15. — Roger F. Hosford, a retired telephone engineer for the American Telephone and Telegraph Company in New York, died yesterday at his home, 25 Lincoln Street. He was 80 years old. Mr. Hosford was graduated from Massachusetts Institute of Technology in 1897. His wife, Mrs. Lillian Canavan Hosford, and a daughter, Mrs. Louise H. Kimberland, survive."

Commander Frederick A. Hunnewell writes from 2122 Massachusetts Avenue, N.W., Washington 8, D.C., that he will not return to Winter Park, Florida, this winter as he has for many years in the past. He and Mrs. Hunnewell are planning to go to Arizona this year. The mild weather in Florida has its charm, he says, and he doesn't anticipate it in Arizona. This last summer they made a trip to Europe which they found very interesting and enjoyable, landing at Naples and proceeding north to Rotterdam. They visited the usual points of interest in Italy, Switzerland, Germany, and Holland. The S. S. Independence east-bound and the S. S. Nieuw Amsterdam west-bound upheld their reputations as fine ships and smooth seas added to the pleasure. As distinct from two previous ocean trips on "Cruise Ships" this particular journey was on the "Independent Inclusive Travel" plan and Cook handled the details to good advantage. To the casual traveller the European scene appears about as usual but evidence of severe war damage still remains in various localities. People everywhere were going about their usual activities and the tourist is welcomed by travel facilities and hotels in the usual efficient fashion.

Upon leaving Arizona this winter, the Hunnewells plan a trip to Southern California and on the return to Washington will stop at San Antonio and New Orleans.

We regret to announce the death on October 25, 1955, of Minot A. Bridgman.

The following notice appeared in the Boston *Herald* of October 26th. "New Hampton, N.H., Oct. 25 — Minot A. Bridgman, 84, for 47 years head of the Industrial Arts classes in Brookline, Mass., High School, died at his home here today. He was graduated from Massachusetts Institute of Technology in 1897 and organized the industrial arts curriculum in the Brookline schools. He retired 10 years ago and came here to live where he had made his summer home for 40 years. He leaves his wife, a daughter, Mrs. Ralph Ness of New Hampton; a son, Minot A., Jr., of White Plains, N.Y., and four grandchildren. Funeral services will be held at the New Hampton Village Church at 2 p.m. Friday and burial will be in the Village Church Cemetery."

We are still without any perceptible reaction from the members of the Class regarding activities next June around Alumni Day. Our 60th anniversary, of course, doesn't come until June, 1957.

Miss McCormick, our Treasurer, reports a balance of \$386.62 in our Class fund as of the middle of December. — JOHN P. ILLSLEY, *Secretary Pro-tem*, 26 Columbine Road, Milton 87, Mass.

• 1898 •

Through the thoughtful good offices and courtesy of Orville B. Dennison, we are in receipt of some very interesting information concerning our classmate, Rear Admiral A. Loring Swasey. Dennie came across the following item in the October 29, 1955 issue of the *Daily Gazette* of Taunton, Mass.

"130 Pay, Honor Admiral Swasey. 5 Taunton Groups Fete City Resident. One hundred thirty persons gathered at American Legion Hall last night and paid tribute to Taunton's only Admiral in its three-century-plus history — Rear Admiral A. Loring Swasey, USNR, retired. The event honoring 'the Admiral' was sponsored by Taunton Post 103, American Legion, of which Admiral Swasey was the third commander; St. Thomas Church, Taunton Elks, and the Taunton Rotary Club. Vice-Admiral Edward Lull Cochrane, USN, retired, and vice-president of the Massachusetts Institute of Technology, was the main speaker and paid a glowing tribute to Admiral Swasey in one of the many highlights of the evening. The sub-chasers designed by Admiral Swasey during World War I and the PT Boats designed by him for World War II contributed a great deal to United States Naval victories, Vice-Admiral Cochrane told the gathering. Capt. William E. Howard, commandant of the Boston Naval Shipyard, a close friend of Admiral Swasey, spoke also to the group and praised Swasey's accomplishments. Admiral Swasey was presented a Paul Revere Bowl by James Thomas, commander of Taunton Post 103 of the American Legion, in behalf of the Legion Post, St. Thomas Church, Taunton Lodge of Elks and Taunton Rotary Club. Miss Mary V. Moran of the American Legion Auxiliary presented Admiral Swasey with a pen and pencil set in behalf of the American Legion Auxiliary."

Frank E. Smith, Superior Court justice, served as toastmaster. Invocation was delivered by Rev. Joseph F. O'Connell of

St. Paul's Church. Mayor Joseph C. Chamberlain extended the greetings of the City. Benediction was pronounced by Rev. J. Holland Beal of St. Thomas Church. Illustrating the article is a striking photo with the caption underneath:

"Recalling memories of Naval service — Rear Admiral A. Loring Swasey (center) USNR, retired, discusses experiences in United States Navy with Vice-Admiral Edward Lull Cochrane (left) USN, retired, and Capt. William E. Howard, commandant of the Boston Naval Shipyard, at a reception at the home of Rev. J. Holland Beal, 115 High St., prior to testimonial honoring Swasey. A total of 300 persons gathered at American Legion Hall to pay tribute to Taunton's only admiral in its history."

We always knew that our classmate had served with distinction in the Navy, but were rather hazy as to details. Thanks, Dennie, for bringing to our attention the outstanding quality of the services performed.

In our astonishment at this revelation of the distinguished service performed by one of the members of '98 we are wondering how many more of the Class have also done something really worthwhile, and are too modest to tell their fellow classmates about it. We cannot help thinking of the well-known couplet: "Full many a gem of purest ray serene, The dark unfathomed caves of ocean bear." This, en passant, is not because Rear Admiral Swasey was in the Navy. We are wondering how many more gems there are in the Class, sparkling unseen so far as their classmates are concerned. You don't need to be embarrassed about telling us what you have accomplished. If too modest to take the personal credit, attribute it all to Alma Mater.

The prestige of M.I.T. is due, in part, to the accomplishments of its graduates. In the case of certain members of the Class, these accomplishments are written up regularly in the daily press or appear in popular magazines, and are thus readily available. These we can include, as a matter of course, in the Class Notes. We are seeking items concerning those unseen accomplishments, which will never be known by the Class as a whole unless somehow they are brought to our attention; your accomplishments and those of your children and grandchildren. Not that we seek to start a bragging contest, but rather a wholesome interchange of personal items among the members of the '98 family.

Are you interested and hopeful that economic conditions in this country will continue at a high level? If so, read the following from the Boston *Herald* of November 5, 1955 and take comfort: "Babson's Sees 1956 Second Best Year. Next year should be the second best economically in the country's history, a vice-president of Babson's Reports, Incorporated predicted yesterday. George M. Rideout made his forecast in an address to a meeting of the 42nd annual National Business Conference of the Babson organization, held at Babson Institute, Wellesley Hills. Rideout said the signs indicated that in many ways the 1956 business trend would be almost exactly opposite to that of 1955. He pointed

out that this year started with a sharp upsurge and was ending with moderate declines, but said 1956 promised to start with a downward movement to be followed by recovery in the latter part."

Honors continue to be showered upon Lester. We have not yet finished reciting interesting details from his remarkable trip of last summer to the West, wherein he received many honors, when along comes news of the following. There will be a dinner held in Washington on December 17, 1955 (Copy for these notes is being written on December 2 to appear in the February 1956 issue of the Review.) on which occasion plaques will be presented to ten persons, prominent in the history of aeronautics. Three M.I.T. men are on the list: Godfrey L. Cabot, '81, Jerome C. Hunsacker, '12, and Lester.

Are you interested in Einstein? Then, secure a copy of the Atlantic Monthly for June 1955, and read the leading article, "Albert Einstein — Appraisal of an Intellectual," by George R. Harrison.

We had an interesting visit recently with our classmate, Jack Bleecker. Happening to drive over to West Chester, Pa., with my daughter, Mrs. Holden Furber, who was going to the hospital to visit a friend with a new baby, it occurred to me that Jack lived in West Chester. So I telephoned. "Yes, Mr. Bleecker was at home." The daughter drove along the pleasant and wide avenues of West Chester and we noted many handsome dwellings, and finally came to the Bleecker residence, — a large and impressive mansion of stone, located well back from the road behind a spacious lawn. Jack and the secretary had a wonderful visit in the next two hours. After all, trying to cover experiences for nearly sixty years, takes some telling. Jack has engaged in innumerable enterprises; for the last twenty years, prior to retiring in 1954, with the Pennsylvania State Employment Service. He had a heart attack, about a year ago, complicated by some unpronounceable disease (Jack showed me the name posted on the side of an elevator, which has been installed in the home to make it easier for him to go upstairs). The following item from the Newsletter of the Pennsylvania chapter of "IAPES" (The International Association of Personnel in Employment Security) indicates the high regard in which our classmate is held by his professional associates. We quote in part, — "John Bleecker, well known and loved as Mr. 'IAPES', is starting a new career at an age when most older people have been retired for some years. Bleecker, who left the Bureau in September of 1954, taught himself to type and is pounding out copy as a free lance writer. John's address is Bleecker Hall, West Chester, Pa. We know that he would appreciate hearing from his many friends."

Mrs. Bleecker, unfortunately, was not at home, when we called. The present Mrs. Bleecker is Jack's second wife. When they were married, Jack had 5 children and the wife, four; together, as Jack put it humorously, enough for a full baseball nine. What merry times they must have had in the large mansion with its spacious grounds! There are now 27 grandchildren and one great-grandchild. All

told there are 47 members of the family. Can anyone in '98 o'ertop that?

Jack appears to be very fond of his numerous progeny and to keep track of their doings. With becoming pride he showed me the following item from the July 15 issue of the daily *Local News* of West Chester, Pa., concerning his grandson, Richard: "Richard W. Bleecker To Sail Next Month For Year In Germany. Richard W. Bleecker, son of Mr. and Mrs. Edmund Cabeen, of Wayne, will leave August 24 on the U.S.S. New York for Germany where, as an exchange pupil, he will attend classes in Die Waldschule, located in the suburbs of Berlin. Richard, who will be 16 this month, is the grandson of Mr. and Mrs. John S. Bleecker, Virginia Ave. and New St. and Mr. and Mrs. Samuel H. Gray, 333 W. Barnard St. A better-than-average 10th grade pupil at Radnor High School, he has served as a member of the Student Council and hopes one day to attend the new United States Air Force Academy. His favorite subjects are mathematics and science and his interests include sports, reading, and listening to music, both classical and jazz. While Richard is spending the next year in Germany, Monika Schleif, of Die Waldschule, Radnor's affiliated school, will attend Radnor High School as part of the exchange program." Richard, Jack stated, writes that he is enjoying the school in Germany greatly.

Kindly note a new address for Louis Pontasse, Orleans, Mass. EDWARD S. CHAPIN, *Secretary*, 2 Gregory St., Marblehead, Mass. — ELLIOTT R. BARKER, *Assistant Secretary*, 20 Lombard Road, Arlington 74, Mass.

• 1899 •

Your secretary, in Boston for Thanksgiving, had the pleasure of attending the M.I.T. Council Meeting at the Faculty Club on November 29. At the dinner he sat at a table with Miles Sherrill and Tim Kinsman. From these classmates he learned of a luncheon to be held at Portland, Maine on December 1 in honor of the memory of William Stark Newell by the Newcomen Society of North America. On that date, Hervey Skinner called for me at my sister's home in Melrose, Mass. At Henry's home in Wakefield we were joined by Mrs. Skinner and Miles Sherrill of Brookline. Tim Kinsman joined the party at Newburyport. The luncheon was held in the Hotel Lafayette in Portland. The guest of honor and speaker was John R. Newell. John gave a most impressive account of the important accomplishments of our distinguished classmate, Stark Newell. The Newcomen Society, established some 30 years ago, is named in honor of a British pioneer (1663–1729) and is a volunteer cultural organization interested particularly in "those factors which have contributed or are contributing to the progress of mankind."

The Society (headquarters in Uwchlan Township, Chester County, Penna.) has published a brochure written by John Newell which outlines in 30 pages the inspiring life history of our distinguished departed classmate.

Those of you who attended the 50th

Class Reunion in '49 will remember the frail little granddaughter of Fred Waddell. She was only twelve years old then. Six years later, on Nov. 25, she was married to a young man in officer training.

I have mentioned before the kick I get out of being a director of the Albany Senior Citizens' Center. Elderly, idle, lonely people derive much benefit from learning some creative activity or hobby. Fred tells me that he is interested in a somewhat similar organization, only they call themselves MORA which stands for the "Men of Retirement Age."

Fred Waddell recently called on Bill Hazard. Some five or so years ago, Bill suffered the amputation of his leg at the hip but has an artificial limb which permits him, with the aid of two canes, to walk around his room, and even to go up and down stairs. That takes courage and determination, Bill, but we are all rooting for you. — B. R. RICKARDS, *Secretary*, 381 State St., Albany 10, N. Y. MILES S. RICHMOND, *Assistant Secretary*, Little Compton, R. I.

• 1900 •

We have two deaths to report at this time. We quote from the Newport, R. I. *Daily News*: — "Arville Clayton Redman, 78, a retired civil engineer who worked 32 years at the Naval Training Station, died (October 17, 1955) at the home of his daughter, Mrs. Ann Otway of Yznaga Avenue. Born in Belfast, Maine, he was the husband of the late Melisa Grey Redman. A graduate of the Massachusetts Institute of Technology, he worked in the public works division at the Training Station. Retiring in 1941, he moved to Safety Harbor, Fla. Since last May he has been living with his daughter here. Besides his daughter, he leaves a son, Dr. William Redman, formerly of Powel Avenue."

The Alumni office has informed us of the death on October 12, 1955, of Mrs. Lewis S. Thorpe of Covina, California. We knew her as Edith Liliencrantz who graduated with us in Course IV. We have received a letter from Mrs. Paul Delano which reads in part as follows: — "Paul was so modest about his accomplishments that I could never get him to say anything about himself. [This being in reference to our request that she write a brief biography of him.] He was truly a fine engineer and I am sorry that I can't give you a write-up of his work. I can say that from 1901 to 1906 he was on railroad location work out in Middletown, Ohio. He built some beautiful bridges up in northern New York State. He had charge of building the State Pier in Plymouth in '21 and was at the Cape Cod Canal from 1934 to 1937. Also a large private dock in New Haven in 1939. Due to poor eye sight he was obliged to give up close work at the office, so made over his business and office in Plymouth to our son, Joseph, who is carrying on and doing a fine job." — ELBERT G. ALLEN, *Secretary*, 11 Richfield Rd., West Newton 65, Mass.

• 1902 •

The following newsy letter has been received by Dan Patch from Ken Grant — "Dear Dan: This is a belated reply to several interesting and welcome letters

from you for which I thank you. I enjoyed the copy of your letter to Eastwood, with the photos of yourself and the lobsters. You look pretty rugged, and I can imagine how much you enjoy that Maine coast. Congratulations to you and Mrs. Patch on your Golden Wedding Anniversary. It must have been a very heart-warming occasion, in a town where you have always lived.

"Construction activities out here are reaching a new high. For the past six weeks, however, a serious teamster strike against the employers of the Rock Products industry, has stopped all major construction jobs in this area for lack of sand and rock for concrete.

"About Grant Taylor's newspaper clipping, and the Russian Prince. The wedding of Prince Cantacuzene and Julia Dent Grant, grand-daughter of Gen. U. S. Grant did not take place at Kay Chapel (the Parish Chapel of Trinity Church) but at some other chapel in Newport. I don't recall the name; this all was fifty-six years ago. So I did not play at the wedding although I was organist at Trinity at the time.

"About my work here — We dissolved the corporation, Grant and Brunner, Limited, in October 1954, as my associates wished to retire. We had carried on for thirty-two years, as engineers, architects, and managers of construction, practically all on the layout, design and erection of industrial plants. Our work extended through the period of tremendous industrial expansion that has taken place in this locality and I like to think that we played a helpful part in this growth. Some of our clients we have served on 'repeat' orders for thirty-two years. At present I am carrying on in semi-active private practice as a consultant. I also spend some time on several committees of our very live Chamber of Commerce; at the present time as vice-chairman of the Engineering Consultants and Architects Committee.

"Mrs. Grant and I have been very happily married for forty-two years and have two grown children, both of whom graduated from Stanford. John was in the navy in the Pacific in World War II and is now an attorney. Janette is now Mrs. Edward Garnier. Both live in Los Angeles. There are two grandchildren, a girl and a boy.

"We had a very delightful trip last summer — the North Cape Cruise on the Carona, which gave us our first look at Iceland, Norway, Sweden, and Denmark and a little while in Scotland, where my father was born and in Ireland where my mother was born. Also a few days to see London once more.

"I am looking forward tentatively to the 1957 Reunion, but it is still a little far ahead to be sure. Please give my warmest regards and best wishes to Mrs. Patch, and my very best to you and any other classmates you may see." — BURTON G. PHILBRICK, *Secretary*, 18 Ocean Avenue, Salem, Massachusetts.

• 1903 •

We have little to write about this month. Happily we have received no notices of deaths in the class. John Nolan has gone to southern California for the winter after leaving various clippings and

programs of past Institute affairs with the secretaries.

Jim Welsh, VI, has retired and moved his family to Florida, writing as follows: — "We now reside in Winter Park. We will probably spend eight or nine months of the year here and return north in the summer to visit sons — James, Jr., who is Assistant Trust Officer of the Chemical Corn Exchange Bank in New York, and Clement, who teaches at Kenyon College and Bexely Divinity School at Gambia, Ohio. I seem to be in the secretarial business as I have been secretary of the Camera Club here and am secretary of the Harvard Club of Central Florida and have been appointed assistant to the secretary of the University Club of Winter Park. We have bought a lake front home here and as my wife is also active in club and church work we feel we will enjoy it very much. My failure to show up at the recent reunion arose from the problems in selling our Northport, Long Island home, which were eventually solved. We find the Florida climate more salubrious than in the north."

We are getting quite a Florida branch of the class, and hope they will get together once in a while. Maybe we'll celebrate our 75th reunion down there. We've just endured the coldest and wettest November in years. — FREDERICK A. EUSTIS, *Secretary*, 131 State Street, Boston, Mass. JAMES A. CUSHMAN, *Assistant Secretary*, Box 103, South Wellfleet, Mass.

• 1904 •

As these notes are written on December 10, 1955 they are reasonably correct as of that date, but as you will not read them until sometime in February 1956, they may by that time be out of date and not too correct. However, as we have to present them to the Review office at least six weeks before publication, we (secretaries) cannot be fully up to date.

As I write, I can still hope you will have a Merry Christmas and a Happy beginning to a New Year, but as you read them the hope changes to the past tense and I hope, and am quite sure, that you must have *had* an enjoyable holiday season.

A letter received from Elmer A. (Shorty) Holbrook gives additional information about our classmate Alpheus C. Lyon, whose death was mentioned earlier. "Skipper" Lyon, as we called him, attended the University of Maine from 1900 — 02, where he was a member of Phi Gamma Delta. So when he transferred to Tech in his junior year, he affiliated with the M.I.T. chapter of that fraternity. He brought from Maine a little boat or yacht, and he and his friends spent much time in it in and around Boston Harbor. After graduation, in Naval Architecture, he went west and some years later wrote me that he had decided that he had rather be a "private in the state of Maine than a general in any other part of the world." He was for many years a professor of civil engineering at the University of Maine."

In an earlier issue, I spoke of the passing of our classmate, Julius L. Hecht of Willmette, Illinois, but at that time had no information about him. Since then I

have received the following memorial prepared by the Western Society of Engineers of which he was a past president, which gives us some interesting information about our classmate.

"Mr. Hecht, who had retired as vice-president in charge of operations of Public Service Company of Northern Illinois, was an outstanding engineer and leader in the utility industry. He was nationally known for his pioneering efforts, particularly in introducing the use of the metal clad switchgear in this country. Chicago has lost an outstanding engineer. Mr. Hecht was noted for his kindly interest in the welfare of his fellow employees, and for his constant efforts to better their conditions."

Also some time ago I inserted a clipping from the Quincy, Mass. *Ledger* about the death of our classmate Herman O. Blatt and now I quote from the Boston *Herald* of Nov. 12, 1955. "Herman Blatt, 76, father of Quincy City Manager Donald H. Blatt died today at Quincy City Hospital. Mr. Blatt was a retired employee of the Simplex Wire and Cable Company, Cambridge. He was graduated from M.I.T. in 1904."

Harry Kendall, who was a player on the Gardner High School football team of 1899, and has always retained his interest in the sport, has been sending to me, from time to time, the results of the current G.H.S. team and with the account of the Thanksgiving Day game (which Gardner lost) came this clipping from the Gardner *News* relating the death of another 1904 man, W. S. Dillon. "W. S. Dillon of Fitchburg, once a Dartmouth football great, died in a Greater Boston hospital after a long illness. A World War I major, Dillon was active in the Legion and was widely known in this city." Dillon was with us as a freshman and then transferred to Dartmouth, where he played on the Dartmouth football team. He died on November 23, 1955.

Now a letter from Arthur D. Smith which gives us some interesting facts on one of our classmates. "Stan Skowronski V, whom I had not seen for over forty years, called at my summer home in Harwichport, Mass. in September and we had a most pleasant get-together. He was looking well, had entirely recovered from his trouble that prevented him from attending the 50th reunion and vowed he would be on hand Alumni Day in '56.

"Stan is a world recognized authority on copper refining and has been called as an expert to many localities in Europe and South America. As I also had worked abroad for several years, we especially enjoyed comparing experiences and impressions of different countries we had visited. I envy Stan a little in that he is still fully active in his profession, while I was semi-retired this June. Would welcome hearing from any Course V man; better a personal visit. Farrell, Marston, Whipple, E. W. White — how about it?" Smith's address is 1065 Broughton N.W., Orangeburg, South Carolina.

David Sutton suffered some kind of crippling heart attack in the spring of 1955 which incapacitated him all spring, summer and fall. He has recovered now to the point where he is able to get into his office for consultation purposes and to

take rides, but he had a hard and uncomfortable summer and fall.

Gus Munster was in a hospital for two or three weeks in the late fall. He went in for a check-up and for relief of a high blood pressure condition, and is now much improved and feeling much better. Gene Russell continues to improve after his operation of last fall and is now able to go about his insurance business. He is one of us 1904 men who has not been retired.

That seems to be all I know at present about 1904 men. I would appreciate it much if some of my readers could become writers and tell me about themselves so I could share it with you all. — HENRY STEVENS, *Secretary*, 1082 Commonwealth Ave., Boston 15, Mass.

• 1905 •

Those of you who attended the 50th Reunion at West Harwich in June will remember that Wallace and Ruth MacBriar were leaving shortly for an extended tour. They returned to their home in Seattle on October 12, and Wallace writes, "Had a wonderful trip to Africa. We were 52 days in an auto safari and drove 8,000 miles, 30 of which days were one night stops so you see it was a little rugged, but very interesting. Visited most of the national parks and saw thousands and thousands of animals and also natives of all descriptions, including pygmies. In all, we were 75 days in Africa and then flew to Switzerland, Sweden and Norway." Good suggestion for your next vacation. Harold Hixon III, in informing me of the death of Frank Payne XIII, regrets his inability to join us on our 50th and adds "my older son is showing gray hair and the younger one works for Simplex Wire and Cable Company in Cambridge. He was M.I.T.'41, then spent five years with the Army in the Pacific." You really have to get local news from afar. Ben Lindsly, in acknowledging a visit from your new president, Hub Kenway, tells of Hub's trip to Washington to attend the christening of his first granddaughter. Hub has five grandsons.

On a recent trip to New Bedford, I stopped off at West Bridgewater to pay an official visit to our Class Agent, Bob McLean, and to see his new ranch type home. Bob was in the same good health (and humor) but his wife, whom some of us met for the first time at the 50th had had continuous trouble with arthritis. Returning, I determined to find our long lost classmate, Leslie Clough in Weymouth. Les retired a couple of years ago, after a successful experience as a professional engineer (heating). He seemed in very good health. Just recently I checked up on John Ayer, who was hospitalized by an operation. He was recuperating splendidly at his home in West Medford and by the time you read these notes will undoubtedly be back at his desk. John's firm, Fay, Spofford and Thorndike, of which he is senior partner, has been doing some exceedingly important (and hush-hush) work for the U. S. Army.

These classmates I see occasionally, some frequently, around Boston; what news I get from them seems routine, but if you wish the low-down, I dare you to write me about them, because when you

do, you have to send me news of yourself, your health, your family, etc., so that I may in turn reciprocate. Court Babcock, Bill Ball, Ed Barrier, Henry Buff, Frank Carhart, Walter Eichler, Bert Files, Andy Fisher, Percy Goodale, Ralph Hadley, Gil Joslin, Hub Kenway, Roy Lovejoy, Grove Marcy, Al Prescott, Sam Shapira, Henry Stevenson and Gib Tower. A new idea? Possibly, but showing interest in the fellows you went to school with over fifty years ago could be mutually profitable. Try it.

Frank E. Payne, XIII, died at his home, 303 Sheridan Rd., Glencoe, Chicago, Ill., on Nov. 30, 1955. Frank had written prior to our 50th that he hoped to attend, but at the last minute reported that his health would prevent it. Later he stated that he was in better shape and believed he could make the 51st. Harold Hixon says that soon after graduation Frank, as a salesman for a pump company, found in his travel a lot of favor for a Babbitt ribbon pump packing, located the manufacturer and bought a controlling interest in the Crane Packing Company, specializing in all kinds of packing, especially mechanical seals, now used universally in the trade. He was chairman of the board at the time of his death. Surviving are his widow and one daughter. We reported very briefly in the December issue the death of Arthur P. Gerry II. Arthur attended the 50th Reunion and seemed to be in good health. Having seen him occasionally at his home in Gilford, N. H. summers, I was indeed surprised. He had been in business in Troy, N. Y. for twenty years, before retiring to a farm in Gilford in 1936. A rather busy retirement because he started and developed an extensive insurance business and was a selectman and tax collector for the town, besides operating a farm (small fruits). He was a Mason, a Shriner, a past master of the Grange and an officer of the Belknap County Farm Bureau. His wife, Bessie, survives. At this writing we have just received word that James A. Newlands XI of Hartford, Conn., died on Dec. 2, 1955. — FRED W. GOLDTHWAIT, *Secretary*, 274 Franklin St., Boston, Mass. GILBERT S. TOWER, *Assistant Secretary*, 35 No. Main St., Cohasset, Mass.

• 1906 •

Here we are in the second month of our Golden Anniversary year with our big celebration just four months away. At this writing, December 12, 1955, we have received 73 replies from our first questionnaire sent out in October; 36 replied that they are planning to attend the 50th. Among them are Bill Abbott, Herbert Ball, Terrell Bartlett, Frank Benham, L. N. Bent, Otto Blackwell, Harry Brown, Charles Burleigh, William Cady, Clarence Carter, Sherman Chase, Harold Coes, Stewart Coey, Floyd Fuller, Henry Darling, Michael Gibbons, Samuel Greeley, George Guernsey, Tom Hinkley, Henry Hubbell, Harry Lewenberg, Richard McKay, John Morris, Shirley Newton, John Norton, Llewellyn Parker, Ralph Patch, Charles Shapleigh, Abe Sherman, George Shingler, Percy Tillson, Harold Young. This group is planning to bring about 20 guests. This will give a total

of over 50 with many members of the class who have not replied to date. If you are one of those planning to attend, why not write a personal note to some of your classmates and tell them how much their presence would mean to you. Incidentally, Alumni Day will probably include some innovations this year which should make it better than ever. Watch for other announcements in this connection. The response to the request for Class dues was quite gratifying, as to date we have received about \$430. In his capacity as Class Treasurer, your author wishes to express his appreciation to those who responded to this appeal. It is hoped that the collection of dues at this time will not affect Sherman Chase's work on the class gift as that should involve a real effort on the part of every classmate to give all that he possibly can to the Institute. Personally, I feel that one of the best investments we can make for our grandchildren is to help M.I.T. to turn out the men to keep our country ahead in technical achievements to preserve our freedom from those who would destroy us. This is a sorry way to achieve "Peace on Earth" but with the present state of the world it seems to be the best insurance.

Christmas is two weeks away. Thanks to the good wife the Christmas cards are waiting to be mailed. I might add I assisted with the stamps and the sealing. Two cards have already been received from classmates, namely, Ralph Patch and Fred Batchelder. Ralph's was sent from Winter Park, Fla. and consists of a single page letter typed in green ink with two large poinsettias at the top of the page. Space will not permit the reproduction of the entire letter of over 300 words. The first paragraph refers to Him whose birthday we celebrate on Christmas; the second refers to our thoughts for our friends at this time of year and our exchange of greetings. The last part of the letter advises it was mailed from Christmas, Florida, a village about 20 miles from Winter Park and concludes with the sentence: 'So, from the land of sunshine I send greetings and best wishes for good health and happiness in 1956.' Fred Batchelder's card was mailed from Hampton, N. H. on December 3. I suspect the early mailing was to allow Fred and his wife to get away for St. Petersburg, Florida.

Charles Kasson, VI, is now residing in Arlington, Mass., having moved here from Dorchester in November. He is a consulting heating engineer.

The Secretary regrets to report the death of four more classmates at this time. As we have noted previously, the number seems large but it is not unusual considering the dates involved. They are as follows:

Albert A. Blodgett, IV, passed away October 10 of a coronary thrombosis after an illness of four days at Amherst, N. H. Our records show that for some years Blodgett was an architect in Boston but in 1934 he reported from Greenwich, Conn. and in '35 was a partner in the firm of Blodgett and Cramer at 14 W. 45th St., New York City. From 1948 until recently he lived in Greenwich, Conn. The news of his death was obtained from

Mrs. Blodgett who is now residing in Amherst, N. H.

Albert W. Hemphill, II, died November 12, 1955 in the Community Hospital at Montclair, N. J. after a long illness. The following is taken from a notice included in the Montclair Times of November 17: "Born in Germantown, Pa. 70 years ago, Mr. Hemphill was the son of the late Alexander J. Hemphill, for many years president and chairman of the Guaranty Trust Company, and the late Jeannette Cadmus Hemphill. He attended Massachusetts Institute of Technology and graduated from Haverford College in 1906. Prior to that, he attended Choate School, Wallingford, Conn. Mr. Hemphill was employed for many years by Stone and Webster, Incorporated, construction company. More recently he was with Flynn, Harrison and Conroy, Incorporated, insurance brokers of New York City. He was a captain in the Field Artillery during World War I and was active in the Reserve Officers Association until recent years.

Surviving are his wife, Mrs. Margaret Hovey Hemphill; four sons, Alexander J., Franklin H., Geoffrey and Albert W. Hemphill Jr., a sister, Mrs. Charles Bolte; and two brothers, Clifford Hemphill and Meredith Hemphill."

Clarence N. Stone, VI, died June 20, 1955. In 1915 Stone was reported as being in the advertising business in Boston and resided in Newton, Mass. In June, 1935 he was with the Babson Statistical organization in Wellesley Hills, Mass. and lived in West Newton up to the time of his death. In answering our reunion questionnaire, Mrs. Stone wrote me that her husband passed away very suddenly on the 20th of June and "the shock of losing a loved one who had been a wonderful companion for nearly half a century has been very great." Although Stone seems to have spent most of his business life in Boston and vicinity, he evidenced no interest in class affairs.

The date of death of Wendell P. Terrell, II, is unknown. In 1913 Terrell was listed as being a professor of mechanical engineering at the Prairie View State Normal School, Prairie View, Texas. In 1921 he was with an engineering and construction company in Atlanta Georgia; in 1934 at Houston, Texas; in 1943 at the Virginia State College, Petersburg, Va. and in 1946 he reported that he was in Washington, D. C. as a civilian employee with the Navy Department. He came to Boston at the time of our 40th Reunion and attended some of the events on that occasion. His death is reported at this time as the reunion questionnaire was returned marked "deceased" with no date given. — JAMES W. KIDDER, *Secretary*, 215 Crosby Street, Arlington 74, Mass. EDWARD B. ROWE, *Assistant Secretary*, 11 Cushing Road, Wellesley Hills 82, Mass.

• 1907 •

During recent months I have had a substantial amount of correspondence with some of our classmates in connection with our 50-year Class Gift Fund, but few facts appropriate for publication in The Review have come to me.

From a letter received last November

from John F. Johnston, Course I, 1406 Hawthorne Terrace, Berkeley 8, California, I quote: "When I graduated, I came to California and established myself at San Francisco, where I worked for a few years as structural draftsman, estimator, designer, and field engineer. Then I branched off into a mechanical type of structural work, on bridges, gold dredges, rock crushers, etc. All together I worked for about fifteen years as an engineering technician. In 1922 I moved into industrial engineering, having to do with plant maintenance and with sales and delivery problems, including ten years with a major oil company. In 1935 I began work with the Federal Government in the Soil Conservation Service where I served as personnel officer and flood control engineer. When the area office moved to Portland, Oregon, I transferred to the Maritime Commission, where I was administrative assistant to the area chief of construction. When the work of that office was finished in 1944, I transferred to the San Francisco Naval Shipyard, where I served eight years as training superintendent. I retired in February, 1953, at the age of 69. I have had a happy and useful work life, and I realize that it was possible only because of my fine training at the Institute. I was married in 1911, and my married life has been happy and productive of four daughters. My wife and I are still together. Three of the four daughters graduated from college and the fourth from a music school. She is unmarried and now is in Berlin, Germany. The other three married well and have given us nine grandchildren. I am so far away that I have let myself grow away from anything more than a slight interest in the Institute and its development, although I am acutely conscious of my debt to it for excellent training, and I am very proud of its fine reputation. I have attended several dinner meetings of the San Francisco Tech Club."

The present address of Ernest A. Miner is Punta Gorda, R.F.D. #1, Box 387, Florida. — BRYANT NICHOLS, *Secretary*, 23 Leland Road, Whitinsville, Mass. PHILIP B. WALKER, *Assistant Secretary*, 18 Summit St., Whitinsville, Mass.

• 1908 •

At our November Dinner Meeting it was pointed out that most of us are near the "three score years and ten" and perhaps in 1958 some of us might not be able to attend a 50th Reunion, so we are planning an informal 48th Reunion on the Cape, June 8-10, 1956, returning to Boston for Alumni Day on June 11th. Ladies are invited and we are hopeful of a good turnout. Negotiations as to location are still underway, but the date is June 8-10th. Plan now to be with us. More information later. News is still scarce. If you don't feel up to writing a letter, how about sending in a postcard so we will know you still are thinking of '08.

We are sorry to report the death of John Larned on December 3, 1955. The Boston Herald of December 4th reported it as follows: "The Right Reverend John Insley Blair Larned, 72, former suffragan bishop of the Long Island, N.Y. Episcopal diocese, died yesterday at the Phillips

House of Massachusetts General Hospital.

"Bishop Larned, who had been living since retirement in 1953 at Dublin, N.H., was bishop of American Episcopal churches in Europe as his last assignment. He once remarked, 'I have filled almost every position in my church.'

"Bishop Larned became a bishop in 1929. He had served churches on Staten Island, in Kingston, N.Y., and became dean of the pro-cathedral Church of the Nativity in Bethlehem, Pa. He had served as general field secretary of the National Council of the Episcopal Church.

"Bishop Larned was married last year to Mrs. Mabel Burrage of Boston after the death of his first wife. He leaves also three children, J. I. Blair Larned, Jr., of Chicago; Mrs. John Davidson of Morristown, N.H., and Mrs. Tyler Weymouth of New Canaan, Conn."

We must also report the death of Edward A. Plumer on October 31, 1955 at Westfield, N.J. The *Independent Republican* of Newburyport, Mass. reported as follows: "Funeral services were held for Edward Ashby Plumer, 142 Effingham Place, Westfield, N.J., who died October 31 in Westfield.

"Prior to his retirement in 1945, he worked 35 years for the American Telephone and Telegraph Company in New York as a telephone engineer.

"He was a life member of the American Institute of Electrical Engineers; life member of the Telephone Pioneers of America; life member of St. John's Lodge of Masons and a member of King Cyrus Chapter, RAM; member of the Westfield College Club and Echo Lake Country Club.

"Besides his wife, Mabel (Page) Plumer, he leaves one daughter, Mrs. George H. Haslam of Westfield; one brother, L. Haley Plumer of Essex Junction, Vermont, one sister, Mrs. William M. Noyes of Newburyport; and three grandchildren."

Have you made your gift to the 1956 Alumni Fund? If you have, many thanks. Gifts count towards 1908's 50th year gift to the Institute. — H. LESTON CARTER, *Secretary*, 14 Roslyn Rd., Waban 68, Mass. LINCOLN MAYO, *Assistant Secretary and Treasurer*, 47 Alton Place, Brookline, Mass.

• 1909 •

In the last number of The Review we included a quotation from a clipping appearing in the St. Petersburg, Florida, Times sent us by Lewis Nisbet, I, which told of Charlie Belden's exciting experiences as a cowboy photographer in strife-ridden North Africa. In acknowledging Lew's letter we noted the fact that his latest address was South Kent, Conn., rather than the erstwhile Republican State of Maine which has been his home address since about 1919. We have just received another letter which reads as follows: "Dear Chet: Sorry, no typewriter! Thank you for yours of the 19th. I enclose another clipping on the Roving Picture Taker. What a life they must have!" Lew further states that he has "not deserted the erstwhile Republican State of Maine" and that when he can make further plans, he hopes to return to Maine. The clipping, another one from the St.

Petersburg Times states that Charlie and his wife Verna had left Africa and its tensions with a sense of relief. While there they passed Oued Zem where massacres took place later. They were lucky in that the bitter rioting in Morocco occurred after they had left the country. While in Europe Charlie filmed the colorful Feria Week in Seville, Spain, and saw the bull fights in Lisbon, Portugal which he said were more humane than those in Spain. They also visited the principal cities in Europe as well as Siena, Italy, for the running of the Palio, the world's oldest horse race. The race is not only the oldest but the wildest and crookedest for no holds are barred to win. In October the Beldens attended the annual Oktoberfest, or "beer bust" in Munich, Germany, and then sailed for home.

In earlier notes we have told of the outstanding bacteriological work that Harold Lang, VII, was doing at the Carnegie Institute of Technology in Pittsburgh. A clipping from the Philadelphia Observer states that Harold retired on July 1 as head of the Department of Science of Margaret Morrison Carnegie College, a division of the Carnegie Institute of Technology. The clipping further states that the Duquesne Brewing Company of Pittsburgh has announced the establishment of an additional department of bacteriological research of which Harold Lang is to be the head. The laboratory will continue Duquesne's advanced research "into the complexities of the science of brewing. In the selection of Mr. Lang, we chose a man who is exceptionally well qualified to head the department." Harold has also been associated with the U.S. Department of Agriculture as a research scientist in food and nutrition and a consulting specialist on food preservation. He is a Fellow in the American Public Health Association, a member of the Society of American Bacteriologists, Institute of Food Technologists, and the honorary societies Sigma Xi and Phi Kappa Phi.

A small '09 reunion was held on Sunday afternoon, October 27, when George and Marcia Wallis, Henry and Madge Spencer, and John and Margaret Davis visited the secretary and Muriel at their home in Winchester.

We were very sorry to learn of the death on October 13 of Marion Willard, wife of Johnny, II, after an illness of several months. Funeral services were held in Wrentham, Mass., where the family lived at one time. Johnny and Marion were married on December 2, 1909. There are four children, three daughters, Virginia, Elizabeth, Marion, and a son, John, Jr. On behalf of the class, the secretary has written to Johnny extending to him its deepest sympathy.

John Davis, II, has received a letter from Mrs. Philip Young telling of her appreciation of the notice relative to Philip which appeared in the November class notes and thanking John particularly for his part in the tribute paid to Phil.

In The December Review we told of the passing of Dale Ellis, VIII. Since then we have received the following letter from Mrs. Ellis. "Dear Mr. Dawes: Thank you for your very nice letter extending your

sympathy and that of the Class of 1909. The beautiful messages I have received from Dale's friends and the respect and affection he had from those who knew him longer than I mean a great deal to me. I have had three wonderful years with Dale and have memories I will cherish, perhaps more than some who have been married longer. His sudden death is difficult to accept as he was so active, happy, and had so many future plans right up to the last. Thank you for the obituary you wrote for the Technology Review. — Caroline Ellis"

We have received a notice that Brainard Dyer, V, died on March 6, 1955, at Hudson, Ohio. While at the Institute his home address was New Bedford, Mass., and he attended Amherst College before entering the Institute. Our records show that, after graduating from the Institute, he joined the National Carbon Company in Cleveland. Later he went with the Aluminum Castings Company, and in 1924 changed to the Vitreous Products Company, both of Cleveland. — CHESTER L. DAWES, Secretary, Pierce Hall, Harvard University, Cambridge 38, Mass. Assistant Secretaries: HARVEY S. PARDEE, 549 W. Washington Street, Chicago 6, Ill.; MAURICE R. SCHARFF, 366 Madison Avenue, New York, N.Y.; GEORGE E. WALLIS, Wenham, Mass.

• 1910 •

It is with extreme regret that I have to announce the passing of Richard B. Fisher on November 15th, and Fred Castlehun on November 24th. The following is from the Boston Herald: "Frederick Karl Castlehun, 68, a retired traffic engineer for the New England Telephone and Telegraph Company, died suddenly today (Nov. 24th) at his home, 51 High St. (Newburyport). He was stricken with a heart attack shortly after attending the Newburyport-Amesbury football game. A graduate of M.I.T. class of 1910, he was a life member of the Telephone Pioneers of America. He was a member of the Historical Society of Old Newbury and the Essex Institute in Salem. He leaves four daughters, Mrs. Thomas E. Littlefield of Newburyport, Mrs. Donald J. Marion of West Newbury, Mrs. North Platte Sherrill, Lexington, Neb., and Mrs. Robert W. Fraser, South Hampton, N.H., and two sisters, Zera and Elsa of Newburyport."

Jack Babcock gave a talk on railroad engineering in Portland, Maine recently and the following is from a Portland newspaper: "Members of the Western Maine M.I.T. Alumni Association heard a retired professor of railroad engineering discuss improvements in railroading since the end of World War II last night in the Columbia Hotel (11-18-55). John B. Babcock, M.I.T. professor for 39 years until his retirement in 1954, talked about the development of the Diesel locomotive, Budd cars and the Talgolow slung train. He described the CTC, centralized traffic control system, where one man controls all signaling on the line. And the professor said that electronics has brought a revolution in control of railroad yards. Professor Babcock singled out the Bangor and Aroostook's new car rental service as a significant development in the spread of

railroads into other transport fields."

Just as these notes were cleared up at Huckins called me and informed me that Stuart Sheddson passed away this morning (December 12th). I have no further information but I do know that Stuart has been sick and has had several operations during the past year. — HERBERT S. CLEVERDON, Secretary, 120 Tremont St., Boston, Mass.

• 1911 •

General Chairman Carl Richmond has named his 45-Year Reunion Committee as follows: C. G. Richmond, Oberlin Clark, Marshall Comstock, Joe Harrington, Don Stevens, O. W. Stewart. Helen Comstock, Gertrude Stewart, and, of course, "Dennie and Jack." All of them are "reunion regulars" and ardent 1911 enthusiasts. With such a group in charge, the success of our get-together scheduled for June 8-9-10 at Snow Inn, Harwichport-on-Cape Cod, and our participation in Alumni Day at M.I.T. on June 11 seems practically assured.

Between mid-November and this mid-December writing of class notes, six more classmates have indicated chances of attendance as excellent: five with their wives, Obie Clark, Jim Duffy, Jack Herlihy, Art Leary and Ed Stimpson; and one stag, G. Arthur Brown. Eight others indicate their chances as fair: B. Darrow, Cal Eldred, Bill Foster, Ban Hill, Ed Sisson, D. J. Smith, Vic Willis and Howard Williams. Another even dozen unfortunately state their chances of getting back are poor. Thus we currently (mid-December) have: 21 couples and 7 stags expressing excellent chance of attendance; 5 couples and 17 stags fair; and 41 classmates with poor chances of attendance. We still must "convince" a lot of Eleveners and wives they should attend, if we are to even come close to the attendance at our 40th, at Snow Inn in 1951, when we had 57 classmates, 41 wives, 5 children and 2 guests. Let's get to work!

It was with deep regret that I learned from Cal Eldred, VI, just before Thanksgiving, of the death of N. Sidney Marston, VI, at his home, 168 Lewis Avenue, Westbury, L.I., N.Y., on November 20. A native of Portland, Maine, where he prepared at Deering High School, Sid was an outstanding student while at the Institute and was a member of the Electrical Engineering Society. He did this thesis with Joe Harrington: "Reactive Voltage at Commutation."

Here is how Cal outlines Sid's career: "As you may know, Sid was an instructor in the Electrical Engineering Department at M.I.T. for a decade after graduation before going into the automobile business in Boston. About five years ago he moved from Dedham to Long Island, where he joined his son's electronic firm, Teletronics, Lab, Incorporated, in Westbury, near Garden City.

"Sid was a brilliant student and his final course marks were mainly a 'C', for with him a mark of 'P' was unusual. Along with his teaching he did considerable consulting work of a high caliber. He was a neighbor of mine in West Roxbury back in 1917 and I well remember the summer he spent on Pender's 'Handbook

for Electrical Engineers." The preface contains this statement: "The plate proof of the entire book has been carefully read by Mr. N. S. Marston of the M.I.T. staff. He has done this work with extreme thoroughness, checking every formula and table either by direct calculation or by reference to its original source. It is hoped that all serious errors have thus been eliminated." That, I believe, gives a measure of the esteem held for Sidney by Dr. Harold Pender."

He is survived by his wife, Marion A., and a son, Robert S. and the latter's wife and five children. Our deep sympathy was at once extended to his wife and in her note of acknowledgement she graciously made a donation to the current Alumni Fund in memory of her late husband. "He was so pleased that 1911 did so well in the Compton Memorial Fund," she wrote, and under separate cover their son, Robert, told of the latter years of Sid's life.

"As you doubtless know," writes Bob, "Dad's association with engineering ceased in the early '20s when he stopped teaching and went into the automobile agency business. This continued until 1950, when he came to work with me at Teletronics Labs as head of the accounting department. This business was started by my partner and me in 1947 to develop and manufacture radio-controlled garage door operators and electronic drilling machines for diameters from .001" to .025". Dad became our fourth employee. We now have nearly 60 employees and occupy two modern buildings with a third in prospect."

One of the joys of a pre-Reunion class dues campaign is the receipt of so many notes from classmates along with their dues. Bob Morse, VI, retired, writes from Summit, New Jersey: "I retired May 1 this year and have since been spending most of the time remodelling our old house in Sandwich, on Cape Cod, so we can live there the year 'round, as we probably will, though not right away. Progress has been pretty slow on the place and it is by no means finished, but I think by next spring it will be livable. The house itself was built about 125 years ago, but a large part of the wood in it came from a 17th century house that stood on that site. Margaret and I uncovered a lot of this wood during the course of remodelling and it is amazing how sound it all is. Wood that we ourselves put in 25 years ago has had to be replaced, while the 300-year-old wood is still perfectly sound. I suppose it was seasoned naturally, while modern wood is kiln-dried." Sara and I share your joy, Bob, for we are making our "Wellsweep" (nearly 100 years old) in Cornish, Maine, more livable little by little each summer.

Lloyd Cooley, X, writes from the Windy City: "Always glad to get your greetings. Busy daily as a manufacturer's representative, selling pipe expansion joints, cooling towers and small boilers. Fair amount of luck. Enjoy the local M.I.T. meetings." Bill Orchard, XI, writes much less cheerfully from Belleville, New Jersey: "It seems quite unlikely that I will be able to take part in the 45th reunion next June. My dear wife, Marie, has been in ill health these past two years

and though I hope and pray that her condition will permit a trip in June, it is not reasonable to count on it. Certainly I hope to see you in January at the class luncheon in New York. My wife's hospitalization last year prevented my being present."

By the way, did you "catch" George Kenney two days before Thanksgiving on the morning TV show "Strike It Rich" when he was the "helping hand" for a cripple on that program? I heard about it from my wife, did you? Although the category was music—and George admitted as how he didn't have too musical an ear—he won \$400 for the man he was helping. Liv Ferris, VI, writes from Ashton Plantation, Lecompte P.O., Louisiana, whence he has retired (his ancestral home): "Crops on the plantation are poor this year. However, I expect to spend Christmas with my daughter in California. I'm afraid I can't join all you lucky classmates at the June reunion, although I may get East sometime in the late winter or early spring. Have a Tennessee walking horse and enjoy some riding."

Wes Jones, II, manager of railroad sales for Barco Manufacturing Company, Barrington, Illinois, writes: "The 'poor', as my Reunion attendance indication, is based on the probability of still being on the job, as my wife and I prefer fall vacations. Three weeks in the Asheville country in October indicated to us that it is ideal vacation territory."

It's always a pleasure to hear from Bancroft Hill, I, retired, who is still doing consulting engineering from his home in Baltimore, Maryland. In this work he specializes in occupational consulting for the handicapped—a most worthy contribution to mankind. "My health apparently continues reasonably good," he writes, "and I am enjoying life and find the occupation of consulting engineer to the handicapped very interesting." He included sketches of a recent invention of his, which Miss Ethel Turner, superintendent of the Baltimore Instructive Visiting Nurse Association, considers the perfect answer to her request for "a simple inexpensive method of enabling blind diabetic patients to be self-reliant in their treatments."

Another joy of pre-reunion correspondence comes from the occasional letters we get from inactive classmates who are essentially alumni of a previous college or university, as for example one from Lewis L. Baxter, IV, retired, from Ponte Vedra Beach, Florida: "I am an old guy 67 years old (!), Vanderbilt University '07, and in the fall of 1908 I went to Boston to take a few special courses at M.I.T. before I went into the construction business in New York City. Ever hear of Ponte Vedra? Everyone gets here sooner or later. Stop by and look us over and have a drink, a game of golf, and relax for a few hours, or even for a few days! Gracious living, with a 'staff' of trained servants, seems a thing of the past, but we have a little guest-cottage on the place, with its own kitchen. The only catch is that we call cottagers "yard" guests instead of house guests, but it really is a beautiful place." Another, Fred R. Churchill, owner and manager of a famous catering company in Cambridge, Massachusetts, signs himself "a very Ex-'ll-er," as he writes: "After my

never-to-be-forgotten year with 1911 at M.I.T., I left college for a year for two reasons: health and lack of funds. I eventually finished up at Harvard, Class of 1913 yet I never drive past M.I.T. that I don't feel that I had a very small part in it and it is a good feeling." Good luck and thanks for the note.—Another: from Winthrop P. Haynes, XII, formerly of Boxford, Massachusetts, now in Caracas, Venezuela, South America, who writes that he has three Harvard degrees; A.B. 1910, A.M. 1912, Ph.D. 1914, adding: "I merely took two courses in Paleontology at M.I.T. in 1910–11."

Holiday greeting cards are just beginning to arrive. President Don and Lois Stevens have a most attractive picture of their four grandchildren as their 1955 motif and we have heard also from Harry and Grace Tisdale early. Harold and Elma Babbitt feature a map of North and South America on their card, which describes their perigrinations since he retired as head of the department of sanitary engineering at the University of Illinois, becoming professor emeritus September 1, 1955. Last June 1 and 2 the Babbitts flew to Rio de Janeiro, Brazil, following an earlier trailer trip to Mexico, from Seattle, which we have already reported in these notes. "We are now with the International Cooperation Administration," Harold writes, "and the Institute of Inter-American Affairs, with headquarters in Rio. This fall we have been flying all over Brazil as routine work and we expect to continue to do this, traveling together on our trips, until June, 1957. Our regular mailing address is Elma J. (or Harold E.) Babbitt, U.S.O.M., APO 676, New York City (please use domestic rate air-mail postage to avoid delays)."

Just after Thanksgiving, Franklin Osborn, III, wrote that his plans had changed and he is not going back to Chile as soon as he thought, so to still use his Vineland, New Jersey, address and the best part was that he said this might mean he could attend the Class Luncheon in New York on January 10. Just one letter was returned in the recent class billings: Edward Kennedy, III, has moved and left no address from 29 Clinton street, Brooklyn. Two other classmates report new home mail addresses: Capt. Ralph T. Hanson, USN, XIII-A, 40 Legare street, Charleston 4, South Carolina and Edgar L. Woodward, 876 Chattanooga Avenue, Pacific Palisades, California. Ralph is retired and Ed is still Pacific Coast editor, Simmons-Boardman Publishing Corporation in Santa Monica, California.

On December 1 cornerstone ceremonies were held for Northeastern University's new \$1,550,000 classroom-laboratory building on the Huntington Avenue campus, in Boston. Students, faculty, alumni, corporation and community leaders watched President Carl S. Ell, XI, put sealed documents and records within the stone and mortar it into place. Carl said some day in the future when the structure yields to a greater Northeastern campus development, "those who open the cornerstones and unseal this copper box will recognize that the real cornerstone of this university is vision and purpose to train generation after generation of able men and women for constructive service to so-

ciety." The building, to be ready for occupancy next September, will have 40 classrooms, three laboratories, offices and other facilities. We can all be proud of the marvelous way in which Carl has been and is building Northeastern!

In closing, please do your best as Loyal Eleveners not only to get to our Forty-fifth Reunion June 8-10 yourselves, with your wife and family, if possible, but try to persuade other classmates to do likewise. Carl Richmond and his committee-mates will do their part, so let's all of us do ours!—ORVILLE B. DENISON, *Secretary*, Chamber of Commerce, Framingham, Mass.; JOHN A. HERLIHY, *Assistant Secretary*, 588 Riverside Avenue, Melrose, Mass.

• 1912 •

Harold H. Brackett has retired from the N.J. Bell Telephone Company after many years as Toll Plant Executive and Transmission Engineer. His friends and associates gave him a reception on his leaving the company. Harold has been in Key West, Fla. visiting various fishing grounds and photographic scenes. He will be located at 515 Summit Ave., Oradell N.J.

Max Mason, who was reported recently as retired to Hillsboro, N.H., on a very attractive old farm, has now acquired a camp on a nearby lake in Hancock. Anybody going through central New Hampshire should be sure to look him up at Bear Hill Road, Hillsboro.

Harold Mabbott, who retired several years ago, is now located at 417 Harvard Avenue, Swarthmore, Pa., and is occupying himself in a small concern making auto beds for infants. He also spends considerable time with the Players Club where his ability as a handy man keeps him occupied in designing and building sets for the stage.

Malcolm Priest has just retired from the U. S. Steel Company and is occupying himself with his hobby of astronomy. He has built his own telescope and has also been able to use the facility of the Frick Laboratories in Pittsburgh. He has no definite plans for the future but is looking forward to spending more time in this fascinating avocation.

Ray Wilson reports that he is very busy at the old job and has very little time to get away from the grindstone. His family now boasts five granddaughters with the sixth expected shortly. One of his daughters is married and living in Baltimore where her husband is a lawyer. Another daughter lives in Trenton and her husband is a Production Engineer with Rohm and Haas.

David J. Guy is now located in Washington, D.C., where he is executive director of the Cosmos Club. Anybody in Washington should certainly give him a ring. Previously he was head of the Department of National Resources of the U. S. Chamber of Commerce and later served as executive vice-president for the American Water Shed Council.

John H. Lenaerts recently retired from the Union Bag and Paper Company and is now located at Bay View Road, Pocasset, Mass.—FREDERICK J. SHEPARD, JR., *Secretary*, 31 Chestnut Street, Boston 8, Mass. LESTER M. WHITE, *Assistant Secre-*

tary, 4520 Lewiston Road, Niagara Falls, N.Y.

• 1913 •

The time has come when all good M.I.T. Thirteeners should come to the aid of the party, the Interim 1913 Reunion at the Coonamesett Inn, Falmouth on the Cape, June 8, 9, 10 and possibly 11. Start making plans to greet your classmates and their families. There will not be a dull moment. Out-door sports include golf, hiking, fishing, swimming, and a cruise around Cape Cod waters (if you desire). The inn is located in the heart of the Cape, only one-half mile from the center of Falmouth with its many historical sites and shopping areas. See the Cape by auto, by plane, by water, by bus, or just by shanks-mare. The indoor sports will include: bridge, canasta, eating, reminiscing, or just plain sitting. The committee has been informed that Bob Weeks has optioned all of the pennies from the Philadelphia Mint. As the Champion in his Class he challenges Rusty Sage or any other matcher of the Indian heads. "Squeeze-Box" and Dance Caller Charlie Brown assisted by Al and Emma Brown will wear you down in the Square Dances. Allen Brewer will pour the "oil" on the troubled waters. Larry Hart will demonstrate how to be "Airry" during a Youth Achievement, as usual. Bill and Ellen Brewster, those Plymouth Rocks will collaborate with all comers on the value of many grandchildren. The Sages will add spice to the party. Jeff Rollason will assist with aluminum make it yourself. He made plenty. Several more acts and performers have been invited to participate with their specialties or servomechanisms and automations. You will receive shortly more detailed programs and questionnaires. Please read the plans carefully and reply to your Reunion Committee promptly. Your cooperation will insure the usual enjoyable and successful 1913 Reunion. We shall be seeing you.

Your Reunion Committee assembled at the home of Bill Mattson on November 29, 1955. Those present were: Bill Mattson and Janet, Ed Cameron and daughter Betty, Frank and Flossie Achard, Roz and Phil Capen. Plans were made for a cocktail party, Class Dinner, 15th Reunion movies by Bill Bryant, and possibly a clambake. Return your suggestions at the earliest moment. It was the consensus of your committee and officers of the Class that the yearly dues for reunion years should be \$5.00 and to quote Bill Ready "If you want omelette someone must kick in with the eggs." So if you agree with us send in the fiver to me if your Christmas bills are paid but let your conscience be your guide. Charlie Thompson left today to spend Christmas with his daughter in Beaumont, California. He expects to arrive back in Boston about January 15. Janet Mattson expects to spend the month of February in Hawaii. Our Joe Cohen will join our "top brackets" as of January 1 when he retires from The Atlantic Gelatine Company. Good luck, Joe. You have worked for it.

Prescott V. Kelly, Brown-Marx Building, Birmingham, Ala. writes that due to not knowing Joe MacKinnon's address he did not know where to send the class

dues. For his information or other inquiring friends; Joseph C. MacKinnon is still the Registrar of M.I.T., Room 7-142, M.I.T., also Treasurer of the Class of 1913. We quote Kelly in part "Some of us far from the Institute are not as conversant with these things as perhaps we should be. In any case, I am not and I am sending you a check for \$2.00 which I will ask that you see goes to the proper place. There is no personal news I can give you of myself, I am still in the same job (president of the Brown-Marx Company) and married to the same wife. I note in the March Class news you ask for information on Julian Adler among others. Dick Adler is a prosperous resident of Birmingham who dabbles in the time he does not travel in utility engineering and financing. His address is 4313 Overlook Road. Best Regards." Thank you, Prescott, for your enlightenment as to Dick. Maybe Dick will read this and send in some real personal news of himself. Your Recording Secretary talked with Fred Murdock today. He sounded very much like the ever dressy Fred of M.I.T. days.

It is with great regrets that we must report the passing of our dear classmate, Herbert Sweet in the late fall. To quote Fred "Sorry about Herb Sweet, a course mate of mine, a quiet type, mild pleasant personality; one whom everybody liked." Fred will be with us on the Cape next summer. Another surprise: William G. (Jack) Horsch finally wrote to Fred and we quote "Before now Joe should have received that buck he has been awaiting so anxiously. This dollar probably goes further than any we pay out. I let Phil Capen's card and my check lie around until I could find time or a few moments for a brief contribution to the '13 notes and now, in the midst of a prolonged hot spell of our normally hot and humid summer, I take my trusty Underwood in hand. My normal retirement date under the provisions of our Company (Socony-Vacuum, now Socony Mobil Oil) plan was July of this year. Actually, I applied for and was granted somewhat accelerated retirement and left last October. It isn't that I was so anxious to be put out to pasture or was contemplating a Florida residence from which it would be too far to commute to Paulsboro, New Jersey. My father died in 1953 at the age of 91, leaving a retail furniture business in Massachusetts which he ran for 54 years. I decided, after securing a suitable manager, to accept the challenge of continuing the business. The consequent 350-mile trips on the long weekends and during vacations became too much of a load when added to my 40-hour week here. Hence the accelerated 'retirement.' Where the wife comes in on this retirement deal is somewhat of an unsolved problem. Gertrude doesn't think that she has retired, but I like to believe that her former rigid routine of running the home has been lightened somewhat. When not travelling, we enjoy the quiet of our comfortable home in Woodbury, N. J. Our children, two daughters, are married, one living in Maine, the other a few miles from us. We have two grandsons. I still find time for my two hobbies,—printing and cross-country motoring. We made trips to the Pacific coast in '47 and '49.

Our next trip we'll try to look up some of the several 13-ers who have gone there to live. Never having regretted my choice of M.I.T. as a college, since my freshman year I have been proud to be a 13-er. However, it does seem that as a bunch of go-togethers, we could achieve a higher percentage representation in the Alumni Fund. As we expect to remain in Woodbury for the foreseeable future, any 13-ers passing through please call. You and Phil are doing an excellent job in prying loose material for the Notes. I'm sorry if I've been remiss or modest in responding in the past. Best regards to you both." Well done you true and loyal 13-er. Use that Underwood more often and in your travels remember we want to see you and Gertrude in June at Coonamesett. Again, Fred comes through with some more news. "I enclose a letter from George MacTarnaghan, Course IV, Architecture, with a clipping about the death of Paul C. Warner." After my close associations with Paul both in school and again at our reunions, mere words cannot express the grief that I am suffering. For your information, Commander Paul C. Warner of the U. S. Navy died unexpectedly Thursday, July 28, 1955, while on his Summer Vacation at Boothbay Harbor, Me. He was a native of North Tonaawanda, N. Y. and a former resident of Albion, N. Y. He graduated from M.I.T. in 1913, entered the Navy in 1917, and served for 30 years until his retirement in 1947. In 1915 he taught architecture at Cooper Union Technical School in New York. Paul is survived by his wife, Mrs. Catherine Converse Warner of Ventnor, N. J. and three sisters, Mrs. Christine Oheler of Westfield, N. J., Mrs. Douglas Ford of Baltimore, Md., and Miss Margaret Warner of Buffalo, besides several nieces and nephews. Services were held at the family home and the St. Joseph's Church in Albion, N. Y. The Class of 1913 extends its most sincere sympathy to his loved ones. We, Fred and Phil send you greetings of the Holidays and will see you at Falmouth in June. Lest we forget send in that five-spot and more news.—FREDERICK D. MURDOCK, *Secretary*, 88 Rumstick Road, Barrington, R. I. GEORGE P. CAPEN, *Assistant Secretary*, 283 Chapman Street, Canton, Mass.

• 1914 •

Fourteen Fourteeners sat down for dinner on Wednesday evening, December 7, at the new M.I.T. Club in New York for one of those social events which Charlie Fiske is so famous for organizing. Paul Owen assisted in arranging the dinner, and Charlie was host at his nearby apartment for a most delightful pre-dinner cocktail party. Although they were unable to stay for the dinner because of a directors' dinner of the National Association of Manufacturers, Norman MacLeod and Skip Dawson were able to be present for the cocktail party. George Whitwell and Dave Gould made a special trip up from Philadelphia to be with us. Dana Mayo came down from Newcastle, New Hampshire, Ralph Perry from Torrington, Conn., and Art Peaslee from Hartford. Others attending were Affel, Howard Morrison, Ober, Owen, MacCart, McFarlin, Wylde, Fiske and your secretary.

Roy Parsell had intended to come, but the dinner was in conflict with a dinner meeting of the New Haven County Technology Club, at which he was introducing the speaker. Les Snow also had a dinner conflict.

At the dinner it was announced by President Charlie Fiske that Art Peaslee had agreed to head up the large-gifts group for our fifty-year fund. It will be recalled that all of our Alumni Fund gifts, including last year's, will count toward our fifty-year class gift to the Institute.

The one general topic most frequently discussed during the evening was retirement. No small number of our class have already retired, and very many more will do so in the next two years. Les Snow, a vice-president of the Chase Manhattan Bank, and Gardner Derry, Division manager of the Blower Division of Westinghouse, both will have retired before these notes are published. Derry has just returned from an extensive European trip. Poor health forced Kirk McFarlin to take early retirement, but he is now associated, as Management Engineer, with the Rife Hydraulic Engineering Manufacturing Company of New York City. Kirk, too, has been traveling abroad, having spent last winter in Central and South America.

Chet Corney, who has made the Boston Edison Company his life's work, has been made vice-president of engineering and construction of that company.

Lucian Burnham, who retired as a Colonel of the Marine Corps a few years ago, has written that he was incapacitated during the past summer with an operation but is now well recovered. Lucian has a very attractive home in Pasadena, where he devotes much of his time to an extensive flower garden.—H. B. RICHMOND, *Secretary*, 275 Massachusetts Avenue, Cambridge 39, Mass. H. A. AFFEL, *Assistant Secretary*, 120 Woodland Avenue, Summit, N. J.

• 1915 •

Our Class has suffered a hard blow in the sad passing of our fine old friend and classmate, Abe Hamburg. He passed away at his home, 220 South Street, Brookline, Mass. on November 10, 1955. We all remember Abe in the best of spirits at our Fortieth Reunion at Coonamesett last June. Stricken suddenly with a coronary attack early in September, Abe was in the hospital for some time and then seemed to be rallying when recurring attacks were just too much for him. He was a great lover of people with a legion of friends in all walks of life. The impact of his kind, sympathetic and considerate nature touched many persons. Abe strayed from his Course I training to own and operate The Superior Engraving Company in Boston, quality engravers and printers to whom many classmates and friends sent their personal and business stationery requirements. He was a painstaking and meticulous artist and craftsman who delighted to explain the finest detail of his work. In fact, Abe donated the Class stationery and always took great pride and pleasure in the composition and production of whatever we wanted. A visit to his office was always the occasion for a protracted session on business, humor-

ous stories and usually a cup of tea. His rich and delicious sense of humor established him as a raconteur with an extensive repertoire.

Our Class sent flowers and an expression of our sympathy. It was a privilege for so many of us with our families to be at his service to pay tribute to him.

Abe attended every Class Reunion and Boston dinner, and had recently been accompanied by his son David, whom we all welcomed into 1915.

Abe's loyalty, interest and activity in all Class affairs made him outstandingly well known and popular. We'll all miss Abe but we'll never forget him.—AZEL W. MACK, *Secretary*, 100 Memorial Drive, Cambridge 42, Mass.

• 1916 •

We just returned from a quick trip to New York City, staying there long enough to attend a meeting of the Executive Committee, followed by a Class dinner at the Hotel Chatham on December 8. The purpose of the meeting was to lay the organizational groundwork for the coming 40th Reunion, and the dinner was scheduled so that we could bring together for a good time some of the fellows in the greater New York City area and to start the ball rolling on generating interest and enthusiasm for the forthcoming reunion.

Three members of the committee and three invited guests were present for the Executive Committee meeting—Ralph Fletcher, Steve Brophy, Harold Dodge and guests Joe Barker, Jim Evans, and George Petit. Unfortunately, Chuck Loomis, Bob Wilson, and Hovey Freeman, each of whom is a member of the Executive Committee and wanted very much to be present couldn't make it because of prior commitments. Walt Binger was invited to this meeting but because he is out of the country he could not make it either. Bill Barrett was invited to take part in this meeting also, and although he didn't get to the meeting he did make the social hour and the dinner party which followed. At this meeting, committee assignments were made as follows: Reunion Chairman—Ralph Fletcher; Publicity Chairman—Steve Brophy; and Finance Chairman—Bill Barrett. Joe Barker, who will be doing a great deal of travelling throughout the country between now and June will concentrate his efforts on building up attendance by calling classmates in the various areas in which he travels. Jim Evans is going to keep pretty busy assisting Ralph Fletcher on reunion plans and program and George Petit will serve as a vice-chairman on the finance committee with Bill Barrett.

The consensus was that we should try to make this reunion the biggest and best yet, considering it to be of the same importance as the 50th, inasmuch as some of us won't be around for the 50th. To do this, everyone is going to have to take an active part in getting others to come back for this weekend on the Cape and renewing the ties which meant so much to us when we were at Tech, and which have been the basis for many wonderful friendships over the years.

We have reservations for the exclusive occupancy of the Oyster Harbors Club in Osterville (Cape Cod), Mass. from Fri-

day afternoon thru Sunday afternoon, June 8, 9, 10, 1956. For those who wish, there will be accommodations available on Thursday, June 7th and also Sunday night, June 10th so that all who want to may stay over Sunday night and make the trip to Boston for the Alumni Day activities on Monday, June 11. We are planning a Class cocktail party for late Monday afternoon for the two-and-a-half hours prior to the Alumni Banquet.

If any man wants to bring his wife to the Cape for the reunion weekend, and some will, we will make arrangements at one of the nearby hotels, not too near and not too far, to take care of them and offer them an interesting program during their stay. All of these arrangements will be spelled out in more detail when our publicity program gets rolling in high gear in the very near future.

The dinner in the evening went off very well, and we are much indebted to Steve Brophy and Jim Evans for handling the arrangements for a wonderful evening. The group at the dinner included: Steve Berke, Dave Patten, Ralph Fletcher, Dick Berger, George Petit, Francis Stern, Joe Barker, L'Roche Bousquet, Bill Barrett, Steve Brophy, Fred Bryant, Harold Dodge, Dutch Gaus, Herb Mendelson, Dick Rowlett, Harvey Stocking, Leonard Stone, Jim Evans, Dina Coleman, Laurence DeLabarre, Jap Carr and Bob Burnap. The plans for the reunion were reviewed following the dinner, and there was a unanimous feeling that we should go all out for the 40th, and there seemed to be a definiteness in the mind of each of these men that he would be at the reunion, no matter what.

We received this very interesting letter from George Maverick: "I am sorry that I can't attend the class get-together on December 8. On that date, I will really be starting a new job, or maybe calling. I will be trying to learn to be a professor. More of that later. About two weeks ago my wife and I got back from a trip to Mexico. The highlight was seeing Jack (George D. Camp) for the first time in about five years. We have both known Jack since childhood and have seldom had to have gone so long without seeing him. He runs his consulting business, raises champion wire haired fox terriers, flies his airplane, and continues to be the best host we know. I have been with Esso Research and Engineering Company, a subsidiary of Standard Oil Company (New Jersey) since 1923. I was in charge of chemical research groups until 1938, and since then have been Manager of Employee Relations. This month I become Employee Relations Advisor, a title invented to describe my pleasant job during the year preceding retirement. Several months ago I accepted an appointment as Visiting Professor at the Graduate School of Business Administration just being formed at the University of Virginia. Next fall I will retire from Esso Research and join the faculty of the University of Virginia. This all fits in wonderfully with other plans. For several years we have been building a retirement home called "Ragged Hollow," near Charlottesville. We still live in Elizabeth, N.J., but we are spending a lot of time at Ragged Hollow. We are quite hepped on the idea

that retirement should be planned early and that a small university town is the place to go. If any of my classmates are interested in that subject, how about writing me in Elizabeth, or coming by Ragged Hollow to see why we think as we do?" Sounds wonderful, George.

And this one from Walter Binger: "Sa-lam! I have been here (Tehran, Iran) for nearly three months and shall return home before another has passed. International Bank asked me to go out here as the sole adviser for four months while one of their men was travelling around collecting top-flight engineers in differing specialties. I am the sole foreign engineering adviser to Abal Hassan Ebtehaj, Minister and Head of Plan Organization. A banker by profession, former Ambassador to France and Spain, accomplished linguist, he is a hard-hitting western-type executive. He has given me a completely free hand and anything I say within my field goes without examination. I am negotiating contracts for cement mills, dams and hydroelectric stations, conducting conversations on a possible steel plant, etc. with contractors from all over the West. At the same time I am inviting proposals from international engineering firms for the design of ports, fertilizer factories, grain silos, etc. I am assisted by young Iranian engineers, who while competent and well-educated in England, France or Germany are completely without experience in big public works and it is therefore not hard to be of help. Socially, Tehran is gay though the city is devoid of music, theatres and all the things we take as commonplace. We have many Persian friends, all of whom speak English or French, while there is a large American and English official colony amongst whom we have plenty of friends, too. I have been received by the Shah, had a long interview with the Prime Minister (in a beautiful ornamented tent in his garden) while the American Ambassador includes us in public and private affairs. We were taken by the Minister of Transport with some other Americans on a private train for a four-day trip to the Persian Gulf Ports and next week we are bound for the Saspian. There I shall visit factories and new electrical installations. I get to the office every day at eight-fifteen. During the day whenever I travel even ten or fifteen miles out of town I am taken back 1000 years. Camel trains are all over, mixed with the overloaded trucks and busses, and the houses are of dried mud. The only other M.I.T. man I have met is Rowe." Sounds like a wonderful experience, Walt.

Shatswell Ober writes: "I wish you would print the thanks of a relatively inactive, unsocial member of 1916 to the more illustrious and important members of the Class for the news that appears in every issue and even more thanks to two men named Ralph and Harold for the gentle goading that is required to maintain such a flow of news. Nothing startling occurs. I still teach aerodynamics and carry out sundry other tasks at M.I.T., and thoroughly enjoy it."

Here is a kind of story that we have been trying to get for a long, long time. We've been after Chuck Loomis to tell

us the "way-back" story and have had several half promises for who knows how long. A recent reappearance was successful and we received the following from the general offices of Bemis Brothers Bag Company in St. Louis: "All right, here goes, although I seem to have led a rather prosaic life and don't have anything to say. I have been with Bemis Brothers Bag Company ever since I got through Tech. In fact, I worked for them one summer before that, and returned to them as soon as I came back from the war. For most of my life I was in line management, first, sales and then manager of a plant supervising both production and sales. Fairly late in life, in 1947, I transferred to a top staff job and am now a vice-president and director of the company, functioning as director of personnel. This business of jumping from a line to a staff position hasn't been easy. I had been accustomed for years to being able to see fairly rapidly the results of what I did. Nowadays I have to look back over three or four or five years to measure my accomplishment, if any. Howard Claussen and Tom Little are also with us, and of course I see them frequently. Howard is vice-president in charge of our cotton mills and cotton purchasing. Tom Little is treasurer and has just been made director of the Burlap Department. He has been assistant director for a number of years. They are both directors of the company. John Phillips, also of 1916, is in our St. Louis general offices.

"I have two sons, one of whom has a Ph.D. from M.I.T., the other a master's degree from Tuck School at Dartmouth, and each of them has four children. Unfortunately, they live too far away for us to see them as often as we would like to. The physicist is at Los Alamos and the younger boy at Tacoma working for the Weyerhaeuser Timber Corporation. I am just back from a business trip to Seattle which included a week-end with the younger boy and his family. I am expecting to retire early in 1957, when I will be 65. I am about three years older than the average of the class because I worked three years between high school and Tech. My move to St. Louis in '47 and the fact that my work after that move was largely outside the city in our various plants has made me a less useful citizen than I would have been had I continued in Memphis, where I had become a part of the civic life. Perhaps that is one thing that may make retirement a little more difficult than would be the case had I lived here longer. However, I am looking forward to it and am expecting to enjoy it, although I do have a few qualms when I think about it. So far as I know now, we will continue to make our base in St. Louis, although we hope to spend at least part of our summers on Cape Cod and perhaps part of our winters in a warmer climate."

We have a word about Tom Holden indirectly every now and then. For example, a little circular from the Architectural Record came across our desk the other day (mid-November) urging us to get the next ten big issues for a relatively low price. In this circular the following little paragraph appears: "1956 Construction Forecast—Where will your ma-

for opportunities lie in 1956? Is another peak year in prospect, or will the record pace of 1955 slacken off? Here's a nation-wide preview of what to expect, written by Thomas S. Holden, Vice-Chairman of the F. W. Dodge Corporation."

This information about our recently departed classmate, Albert Kleinert, appeared in the local newspaper: "Albert E. Kleinert . . . a retired civil engineer for the State Department of Public Works (Mass.) . . . joined the Department of Public Works in 1916. He designed the French King bridge in Greenfield which was awarded the Desmond Fitzgerald prize in 1932 as the most beautiful bridge built that year. He was a member of the Boston Society of Civil Engineers, American Society of Civil Engineers, Massachusetts State Engineers Society, and Loyalty Lodge and Mt. Vernon Royal Arch Chapter, A. F. and A. M. He leaves his wife, a daughter, Mrs. Anthony J. Stapel of Hong Kong, and a brother, Edwin W. Kleinert of Brooklyn, Commissioner of the New York City Board of Standards and Appeals." May he rest in peace. — RALPH A. FLETCHER, *Secretary*, P. O. Box 71, West Chelmsford, Mass. HAROLD F. DODGE, *Assistant Secretary*, Bell Telephone Labs, 463 West Street, New York, N. Y.

• 1917 •

We hope you really missed the appearance of the Notes last month. We, your secretaries, also missed the deadline for the Notes, by reason of a chain of circumstances involving the transfer of responsibility for Class Notes from Cambridge to New York for a couple of months. Your birthday letters, in our opinion, make a most interesting build-up for our big 40th Reunion in 1957.

The privilege of preparing the Class Notes gives me a chance to record a note about your Secretary, which would otherwise never darken this column. The New York Times of Sunday, December 11, in reporting the activities of the several Chemical Societies, stated as follows: "The American Institute of Chemists has given Raymond Stevens, senior vice-president of A. D. Little, Incorporated, the gold medal for 1956." Congratulations, Ray.

Another '17 man in the news is Thorndike Saville who was elected president of the Engineers Council for Professional Development. Thorndike is dean of the New York University College of Engineering. The Engineers Council is a conference of ten major engineering societies in the U. S. and Canada whose major function is the accreditation of programs in engineering colleges.

The birthdays continue to bring in interesting letters as follows:

Harold Perry: "I've been carrying your October 4 letter around on my travels, but this is the first chance I've had to answer it. Although I'm associated with '17, I was at Tech only one year getting an M.S., so my ties aren't as close as those of others; however, I treasure many friendships resulting from that year at the Institute and with the D.U. Chapter. I used to see Penn Brooks occasionally

when I lived in Chicago and I understand he's now enjoying a new kind of life in Cambridge. We saw Christine and Walt Beadle and their children often when we lived in Swarthmore and have met them occasionally in recent years at Vassar '18 affairs. My dear wife Lucy Clark (Vassar '18) died in September, 1952 of a second stroke, following one two and one-half years earlier which had caused partial paralysis, but not enough to prevent our spending those years doing many interesting things — including a winter in Bermuda — and constantly together, as I ceased all business activity after her first stroke in April of 1950.

"Our three children are all married and living elsewhere: Hal, Jr., is a Captain in the Air Force, now stationed near Bedford, England and enjoying life there with his wife and four children. I visited them for a couple of weeks this September and intend to do it frequently while they're there. Lucy, Jr., is married to Franklin Buchanan, a teacher in the O.S.U. experimental schools. They have two children — another Lucy and a Christopher. (One of Hal's children is a Lucy, too; my wife was the fifth Lucy in her family and I think the latest is the ninth, as there are various Lucy cousins, too.) Our youngest, Susan, is married to Shirley Mills, an engineer and mathematician at Aberdeen Proving Ground. They have no children.

"I've been with Hay Associates of Philadelphia since 1948, with time out while Lucy was sick. I resumed soon after her death and travel almost constantly in management consulting. Our work focuses on men and management, dealing with problems of organization, salary administration, job evaluation, and personnel appraisal.

"I've kept the house and gardens that Lucy and I created and loved together. I live alone, with occasional inside and outside help, but I like to maintain the place, both because of its associations and because the children and grandchildren like to visit here and I enjoy what gardening and stone-wall building I have time for, and some modest entertaining once in a while. It's on a wooded hill running down to an old canal paralleling the Delaware River, not far from Trenton, N.J., but on the Pennsylvania (Bucks County) side. Some of my neighbors were badly hit by the recent floods, but we're high enough to be secure."

George Stebbins writes: "I came out here to Seattle in 1941 as general manager of Associated Shipbuilders. Ten years ago I acquired a substantial ownership interest in Lake Union Drydock Company, and since that time have been managing this operation. Our principal business is drydock and ship repair work. We have six drydocks, up to about 3500 tons capacity, and completely equipped shops and other facilities. We do overboard repairs on vessels of any size. We recently completed the construction of four minesweeping vessels for the United States Navy.

"Edna and I enjoy the climate out here, as it never gets very hot or very cold. The outdoor recreation facilities are excellent, with the mountains on one side and Puget Sound on the other. We have a forty-foot

cruiser and spend as much time as possible in good weather out on the water.

"My daughter, Dorothy Lilly, graduated from Smith in 1941 and now lives in Wyncote, Pa. Her husband, Charlie, works for Philco, and they have two little girls, six and nine years of age. He had a long stretch of combat duty during the war on a destroyer in the South Pacific. My older son, Hobart, Jr., attended M.I.T. and the University of Washington, and is associated with me in the ship repair business. He is head estimator, and is taking more of the load all of the time. He was a navigator on a B-24 during the war, stationed in New Guinea, Morotai and the Philippines.

"My younger son, Robert H., graduated from M.I.T. in 1950 in geology. He has had much active field experience in this country, Canada, and Alaska and has also spent some time in graduate work at Columbia University. At the present time he is doing consulting work at Pasadena, Calif., and is continuing graduate work at Cal. Tech. Bob married a New York girl, and they have one daughter, aged three. During the war he spent over three years in the Air Force. I think this brings things up to date in a general sort of way."

From Phil Hulburd: "Affairs seem to go along here about as usual. We are embarked on a new and quite exciting program of mathematics teaching at Exeter, which may or may not be the right solution to current problems in secondary school mathematics teaching. But, right or wrong, we are giving it a try this year — and at the end of the year will be prepared to continue or retreat! Time will tell.

"Betty and I had a busy summer at Meriden, adding a small ell to the old house there, to include a laundry (for grandchildren's diapers), a new bathroom and an additional bedroom (also for grandchildren).

"Lucy and Jimmy are still at Essex and Jimmy is doing consultant business with a number of leather firms in Danvers-Peabody area. Their old house got hit by lightning in July, with quite a resultant fire and considerable water damage to ceilings and floors. They are just now getting straightened out. Lucy produced a daughter last December to go along with her red-headed son.

"Bob is starting his third year at Andover with great satisfaction and, I think, with considerable success. He was at Middlebury German School during the summer and will complete his work for the M.A. there next summer. He and Helen at long last got their wish in March, with the arrival of R. P. H., Jr., who turns out to be a fine little guy full of smiles and good spirits."

Charles Abels: "I agree that the new procedure for obtaining '17 class notes has been given renewed vigor. Just think — it has caused my debut therein after all these years. I retired from the Bell Telephone System in May 1954: reason, neuritis of the legs, handicapping locomotion somewhat and causing partial loss of reflexes and some gravitational instability. I had been with Long Lines in various capacities and locations for a little over thirty-five years. My last assignment was in the Eastern Area Engineering De-

partment at White Plains, N.Y.: a specialist in power plants, toll switchboards, and toll crossbar systems.

"Both my sons are married. One is with RCA, the other with Statistics, Incorporated.

"In retirement in this friendly country town of Tewksbury, close to my home town of Lowell, we have found much happiness and peace of mind. We have about three-quarters of an acre of good farm land. The first summer our forty by one hundred garden yielded bountifully in vitamin rich vegetables and gorgeous flowers. Recently I bought a roto-tiller, whose two tireless horsepower will eliminate much of my own horsework from now on. We call her 'Tillie the Toiler.' I would recommend her to all aspiring and perspiring home gardeners."

Dick Catlett writes: "In just nine days I will be sixty-three and I don't mind it a bit. I find that there are many compensations for advancing years provided that one's health is reasonably good. A slight attack two years ago has served mostly as an excuse to get out of unwelcome tasks and to pass the buck to the younger members of my organization. Back in 1936, after the depression had driven me to three years of active duty in command of a C.C.C. Camp I started this little contracting business in air conditioning and refrigeration. Catlett-Johnson Corporation is, I believe, the oldest organization in Virginia to devote its efforts to refrigeration and air conditioning exclusively. We have stayed small but have built a good reputation and have had a lot of fun doing it. Three of my key employees bought into the business two years ago and are preparing the old man for retirement.

"One of my sons, Dick, Jr., after giving me a try decided to take law and is now doing well in a good Richmond firm. There are two grandchildren in that family. John is also married and is a practicing physician in Richmond. He has a two-year-old daughter. Jane is living in New York, where she is Secretary to Dr. Van Dusen, head of the Union Theological Seminary.

"I have had my nose pretty close to the grindstone and most of my activities have been closely related to my business interests. I have been on the Council of the American Society of Refrigerating Engineers, Chairman of the local section, and President of our Refrigeration Contractors Association. When retirement comes I expect to take some long trips with my wife and to keep my salt-water fishing tackle ready for instant use. I expect also to always have an office downtown as a retreat for contemplation, writing and escape from home work."

Ed Pollard writes: "I will be with the Turbine Engineering Department of the G. E. Company for a few more years as you may realize. I have been in print a few times for the benefit of the trade on special steam turbine application problems. Our two daughters are married and live outside Cincinnati, Ohio. My wife and I have been entertaining our grandson for three months while his mother has been recuperating from surgery in Cincinnati.

"Every Saturday I don my golf shoes

and follow my power mower up and down hill on the back lawn. Have just harvested my first crop of tenderly cared for peaches—five and one-half dozen—and have anchored the trees against the expected storm."

From Charles Venable: "After leaving M.I.T. in 1917, I taught organic chemistry at the University of Virginia for four months (1917-1918). I then had fourteen months in Chemical Warfare Service, U.S.A. (1918-1919), a service I found to be almost dominated by M.I.T. men, including such big wheels as William H. Walker, W. K. Lewis, Bill McAdams, and Bradley Dewey. Whether Washington, Cleveland, or Edgewood, it was like Old Home Week for me.

"After the war (World War I), I came back to M.I.T. for two years in the Research Laboratory of Applied Chemistry just organized by Walker and Lewis. In 1922 I came with American Viscose to initiate and develop their Chemical Research Department, retiring in 1954 as Research Consultant to the Corporation.

"During these last 32 years, it has been my privilege to contact the administrators for most of the leading research groups in the United States, and I have been proud to find so many M.I.T. stalwarts as name players in this group. Among the many, I can mention Allen Abrams, Bill Hainsworth, John Schaefer, Charley Thomas, Roger Williams and Bob Wilson. I have always been grateful for the big assist given by my M.I.T. association.

"As to the more personal life, I was married to Olive Bartlett in Davidson County in 1920, and as to children, we have one of 'everything there is.' The son, C. S. V., Jr., is executive secretary for the North Carolina Tuberculosis Association. The daughter, Harriet, had just taken a secretarial position in Washington, D.C., when President Eisenhower had his heart attack. In a way, I feel responsible.

"My outside interest right now is trying to make life a little more worthwhile for the science teachers in the local high schools. This is, in a sense, an inside interest, as (1) my first year out of college was spent teaching science in the Wilmington, N.C., High School, and (2) my last thirty-two years have been spent in directing the creative work of men who generally caught fire back in some high school. And so I feel I have a large debt to pay in this area before accounts can balance."

Bruce Davis: "I have just passed another milestone on the 18th of this month, making me 64 years young. Mrs. Davis (Marion) and I are enjoying country life in our old colonial home on the bank of the Suncook River. The drought hit our gardens pretty severely this summer, so I bought a small Gould pump, laid 210 feet of plastic pipe into the river and then had all the water I wanted for watering gardens, washing the car, etc. Just had an artesian well drilled through 142 feet of rock and now have a good water supply to house of 11½ gallons per minute.

"I am still in the architectural field, associated with Lyford and Magenau, architects in Concord, N.H. The business conditions in this section of the country

have been excellent and the outlook is still good, with the local banks making alterations to their present quarters and building new buildings.

"My son and his wife came on from Seattle, Wash., in the early part of June and stayed for ten days, and we all took several days' trips through the White Mountains and down through Massachusetts to Provincetown on the Cape and return trip."

Al Moody writes: "I am still down here in Arkansas, working for the Texas Illinois Natural Gas Pipeline Company, and seeing that gas is moved promptly from Texas to Chicago.

"I have been on operations now for about two years. During that time we have had no major construction program. It looks as though I might be here until I have to retire in just four years, but working for a pipeline is just like working for a railroad, and you can never tell when you might be moved.

"My family is fine. I now have eight grandchildren, and they certainly keep a man on his toes."

From Ken Bell: "Before I tell about the Kenneth Bells, let me mention contacts with other '17ers. Our good friends—the Wally Gales (1929) who live here in Melvin Village—saw Ras Senter, on their official Alumni Association visit last winter, and Ras wrote me an enthusiastic endorsement of Mrs. Gale, and the usual kind invitation to visit Texas.

"We had a kind *bon voyage* card from the Stan Lanes last winter, and an itinerary of their trip abroad this summer. I called on Bob Erb this fall and he was then about to start on a combination business and pleasure trip to the Continent.

"While in Beirut, Professor Constan (1933) gave us a party, attended by Emile J. Dumit who, according to Lobdell, has been missing from the Alumni files since 1934; also B. A. Abdulnour '15, and Professor E. S. Hope '26.

"Then, in London, we dined with Secretary and Mrs. Raymond Stevens. We both stopped at the Hyde Park, where Sir Winston and Lady Churchill were also guests, although they didn't notice our advent.

"We received a card from Rudy Beaver, who crossed on the *Constitution* in February, and was to spend four months in Europe. But, our paths did not cross.

"I retired on my sixtieth birthday last October, and the next day we saw a travel agent to plan a three months' trip abroad. On November 1 we moved into a new home in Melvin Village, N.H., designed by Ralph Flather (1921) and spent the next three months painting and papering. Ten days before we started abroad, I received a commission to make a survey of the tanning and leather processing industries of Lebanon, so our trip was extended to four months. We saw Italy, Switzerland, France, Netherlands, England, and Scotland, and then flew to Istanbul for two days and then to Beirut, for five weeks. We flew to London and returned on the *Britanic*, arriving in New York on July 9.

"Most of our family visited us during the summer, and since then we have been busy with company, landscaping and

photography. I have learned to water-ski; have climbed Mt. Washington this summer and still swim every day. I recommend that you take a physical examination before retiring; it is a strenuous life, and not every one is up to it. I've never been so busy in my life.

"We have two M.I.T. sons-in-law, and one whose father is a 1921 man; four grandchildren, all of whom are married.

"Phil Cristal is a summer neighbor, and while I saw his wife this summer, Phil didn't show here." — RAYMOND STEVENS, *Secretary*, 30 Memorial Drive, Cambridge, Mass. W. I. McNEILL, *Assistant Secretary*, 270 Park Avenue, New York, N. Y.

• 1918 •

On Tuesday evening, November 29, a goodly company of the faithful assembled at the Faculty Club for a pleasant festivity. Present were Mr. and Mrs. Eli Berman, Sid Blaisdell, Mr. and Mrs. Lester Connors, Mr. and Mrs. Al Grossman, Mr. and Mrs. Julie Howe, Mr. and Mrs. John Kilduff, Len Levine, Professor and Mrs. Alexander Magoun, Mr. and Mrs. Max Seltzer, Professor and Mrs. Harold Weber, Mr. and Mrs. Chink Watt. Direct word was had one way or another from thirty-one classmates, many of whom regretted a previous engagement. Tom Kelley said he hoped to be with us next year. Tom Fogarty reported from Winter Park, Fla., Art Windle wrote from the Old Soldiers' Home, Carleton. Tucker was sick most of the summer and must husband his strength, Ken Reid saluted us from 1025 Laurel Street, Menlo Park, California, not saying what he's doing out there; and one nameless Philistine informed us he is not at all interested in 1918 affairs. Following the dinner, Harold Weber made an excellent speech and Max Seltzer showed colored photographs of his recent trip to Italy, Israel, Switzerland, and France.

Harold began by going back forty years to the splinters in the Garrison Street gym floor, the amazing new Edison phonograph in the Tech Union, the miracle of telephoning from Boston to New York, our dinkey bellhop uniforms which Major Cole said never wore out from generation to generation, dollars that were worth one hundred cents, and Eddie Pung at the cigar stand. He is an immortal, now to be found at the cigar stand in Walker basement. Reversing his field, and looking ahead, Harold sees world-wide telephones, the disappearance of beefsteak (replaced by protein from algae), carbohydrates from coal, food preservation by chemicals and radiation, a normal life span of a century by better chemical control of what goes on in the body, dust free houses heated and cooled by the sun's rays, weather stations on space ships, gas turbines for automobiles, radar controlled auto brakes which prevent collision, two-way radios widely used so your wife can remind you of the grocery list as you drive home from the office, and vegetable fibers wholly replaced by better artificial ones. The real show stopper, however, was his prediction that vigorous people, killed in accidents, will furnish fingers, hands, feet and vital organs as well as eyes for individuals hurt in an accident.

Sam Chamberlain of Marblehead, noted camera artist of the New England scene, was named winner of the literary award for 1955 of the New England Society in New York. He was presented the award at the annual dinner in the Hotel Plaza, New York, on December 7. All New England governors were present. Sam was cited for "all he has done for New England, both in literature and art, as well as in many other ways." Jack Hanley, engineer for the Fireman's Mutual Insurance Company, died on December 8 at the Jane Brown Hospital in Providence. He was born in Boston, suffered the pangs and torments of the Institute which we all now look back upon as a furnace of living strength, and spent his professional life in Providence. He was a member of the Providence Engineering Society, the M.I.T. Club of Rhode Island, the Appalachian Mountain Club and Gate of the Temple lodge, A.F. and A.M., of Dorchester, Mass. He leaves his wife, Blanche; two daughters, Mrs. Ira C. Marcham, Jr., of Sheffield, Mass., and Mrs. Richard Magherty of Mississippi. Despite being badly crippled by arthritis, Jack never lost the gleam in his eye nor a sense of humor tuned to a joyful wave length. He will be missed. — F. ALEXANDER MAGOUN, *Secretary*, Jaffrey, N.H.

• 1919 •

We heard from Dan Hall that he is still employed as General Superintendent at American Cyanamid's titanium dioxide plant (now owned by New Jersey Zinc Company but not officially taken over) at Gloucester City, New Jersey. Dan says that he sees Harold F. Marshall frequently at Philadelphia M.I.T. Club meetings. Harold is with Warren Webster in Camden, New Jersey and was elected Mayor of Palmyra, New Jersey last November 8.

"Duke" Herzog writes "Nothing new this year." Glad to hear from you anyway.

Reg Hunt, we're sorry to say, writes that "inactivity is a better work than activities in my case. My club, 'Cardiacs Anonymous' has recently added another name to its membership list, General Eisenhower."

Stu Hayes writes, "Same job. Same firm. Youngest daughter graduates from Tufts, June '56. Twins both married. Five grandchildren. Less hair; more waistline."

L. W. Cartland is still in Korea.

James A. Howe let us know that he is still at The Mutual Life Insurance Company in New York as Director of Investments-Industrial.

George McCarten dropped a line to say he was recovering rapidly, spent several weeks in New Hampshire with Cecily and after the New Year will go south. Mac has sold all his interests in Macco and besides loafing likes to write letters from 31010 Edgewood Road, Chagrin Falls RD #3, Ohio. So drop him a line.

Adolf Muller wrote a long letter about his activities in the architectural field. Adolf has been very active in changing New York City's scenery. He writes, "My 1955 contributions to its beauty are The Seamen's Bank building, 30 Wall Street, American Irving Savings Bank on Broadway at Worth Street, New York Trust on East 42nd Street and several branch banks

in Queens and Brooklyn. Under the firm name of Halsey, McCormack and Helmer, Incorporated, (of which he is president) for the past twenty years I have been by far the most prolific bank architect in the East.

"Just the other day I was referred to as the 'dean' of bank architects, which started me thinking that it might be fun to emerge from the anonymity of the firm name and take a few bows on my own." Adolf also adds that he has just returned from a delightful vacation in Spain and finds the weather, the dirt and the fumes of our fair city horrible by comparison. A lot of us here in New York have the same complaint.

Fred Given writes that he was at M.I.T. for a few days recruiting future V.P.s. for Sandia Corporation and saw many of the staff including Lobbie and Conchita. A recent clipping has the following about Fred: "A new vice-presidency of Sandia Corporation has been established — V. P. of research and development services organization. Elected to fill the new vice-presidency was Fred J. Given who has been director of apparatus engineering for the past three years.

"Mr. Given came to Sandia Corporation in February, 1952 after more than 30 years' service with the Bell Telephone Laboratories and Western Electric Company. He joined Western Electric in 1919 after release from military service. In 1925 he transferred to Bell Telephone Labs and held various supervisory positions until he became assistant director of apparatus development, the position he held prior to coming to Sandia. During World War II he served as chairman of the U. S. Mica Mission Board to the United Kingdom and as consultant to the War Production Board.

"From 1948 to 1951 he was chairman of the panel on components for the research and development board, Department of Defense. Since 1952 he has been a member of the Department of Defense advisory group on reliability of electronic equipment." — E. R. SMOLEY, *Secretary*, 385 Madison Ave., New York, N.Y.

• 1920 •

The Class of 1920 appears to be well represented on the Alumni Council and in Alumni affairs generally. To be seen at council meetings are our two recent ex-presidents of the Alumni Association, Ed Ryer and Al Glassett, and such stalwarts as Al Burke, Jim Gibson, Perk Bugbee, Bat Thresher and John Nalle. Bob Patterson has been elected by the M.I.T. Corporation as an Alumni member of the Visiting Committee for the Department of Economic and Social Science. Herb Fales is a member of the Mechanical Engineering Department Visiting Committee.

Ed Burdell, President of the Cooper Union for the Advancement of Science and Art, stated the case for the small college with his customary eloquence in his annual president's report. He pointed out that the small college had the flexibility and adaptability to develop an individual quality of undergraduate education and to gear its educational program to the capacities of its best students. Present enrollment at Cooper Union is about 1400.

Fred Britton's sudden and tragic death

was a great shock to us all. Fred was at the 35th Reunion and appeared to enjoy that opportunity to renew old friendships. He was a staunch and loyal member of the Class and will be sorely missed. — HAROLD BUGBEE, *Secretary*, 7 Dartmouth Street, Winchester, Mass.

• 1921 •

Just four months to go until our gala 35th Reunion opens at the Sheldon House, Pine Orchard, Conn., on June 8, to run through June 10. Then we travel to Cambridge for the annual party of the Class of 1921 just before the banquet on Alumni Day, June 11. Reunion Chairman Mel Jenney and his active committee now have most of the detailed arrangements pretty well completed, as you know from the mailed notices. These notices have been sent to everyone in the Class for whom the Institute has good addresses, totaling about 605, and we urge you to return to your Secretary at once the completed questionnaire form, attached to the first notice, if you have not already done so. Your Secretary will furnish additional forms on request and will also send a complete set of mail notices to those men of neighboring classes who were associated with the Class of 1921 and who ask that they be kept informed of the reunion schedule for possible attendance. With our reunion attendance figures still growing over the years, plans contemplate a record crowd and early reservations are recommended. For special information, address Melvin R. Jenney, 35th Reunion Chairman, care of Kenway, Jenney, Witter and Hildreth, 24 School Street, Boston 8, Mass.

You have also received Class Agent Ed Farrand's thoughtful letter on fulfilling our obligations to Technology through the Amity Fund. Ed and all the members of the Class deserve a round of applause for the tremendous performance which has kept the Class of 1921 well in the forefront of those who have given distinguished support to M.I.T. Now in its fifteenth year, the Amity Fund, as we prefer to call it, has set for 1956 two outstanding goals, namely (a) to give more young men of high promise and limited finances an opportunity to go to M.I.T., and (b) to help alleviate human suffering through Institute support of a remarkable series of aids to the medical sciences such as cancer treatment, replacement of human organs, ultrasonic research in neurosurgery, study of the brain and nervous system through cybernetics, strength of the human skeleton, the effect of atomic radiation on the body and many other related approaches. Your splendid contribution last year towards the Karl Taylor Compton Memorial Laboratories for Nuclear Science and Electronics, now under construction for completion this year, have had a direct bearing in furthering many of these vital projects. Answer Ed's call and send your gift to the Amity Fund now.

The Corporation of M.I.T. sponsored a profound tribute to our beloved Karl Compton last month in New York on the occasion of a formal dinner at the Waldorf-Astoria, with President James R. Killian, Jr., '26 presiding. There followed a symposium on "Science, The Mighty

Multiplier," with General Robert Cutler of the National Security Council and Dr. Robert E. Wilson '16, Chairman of the Standard Oil Company of Indiana, as guest speakers. Our Bill Sherry is an Alumni Term Member of the Corporation. Other news of the official family of the Institute includes a most welcome report from Alumni Secretary Don Severance '38 relating that Irving D. Jakobson and Antonio H. Rodriguez have been signally honored by nomination by the Alumni Association and formal election by the M.I.T. Corporation as members of two Corporation Visiting Committees. Jake, who is President and General Manager of the Jakobson Shipyard, Incorporated, Oyster Bay, N.Y., will serve on the Committee for the Department of Naval Architecture and Marine Engineering. Helier, who is president of the San Augustin Sugar Corporation of Havana, Cuba, is to serve for the Department of Modern Languages. These committees, each composed of three members from the Corporation, three non-M.I.T. members chosen by President Killian and three Alumni members recommended by the Alumni Association with the endorsement of the department heads, meet about once a year to give the respective departments the benefit of advice and opinions of an interested group not directly connected with the Faculty or Administration.

From the recent President's Report, we learn that engineering drawing and descriptive geometry are electives in the new freshman program and John T. Rule, Professor, Head of the Section of Graphics and Head of the General Science and General Engineering Courses, IX-A and IX-B, is continuing adjustment of the application of these and similar courses, pending further stabilizing of the student demand. Jack also heads a new course in Science Teaching, known as IX-C, which has already started to expand from its nucleus of eight students. In the realm of official Class affairs, our Class President, Raymond A. St. Laurent, has appointed Garvin Bawden as Chairman of the Class of 1921 Special Gifts Committee. In his new assignment, Mich will provide and maintain facilities for those who wish to supplement annual giving to the Amity Fund with individual contributions towards general or specific projects. Henry R. Kurth, our Class Representative on the Alumni Council, reports that the Alumni Day banquet will be held this year on campus in the John Rockwell Cage. Chick was recently in New York as a representative of the Boston Edison Company to a switchgear technical committee of the Association of Edison Illuminating Companies. He is assistant vice-president of Boston Edison and Superintendent of the Production and System Operating Departments.

Ray St. Laurent has sent us considerable material on the move of Dr. Walter J. Hamburger's Fabric Research Laboratories from Boston to a modern new home at 1000 Providence Highway, Dedham, Mass. Ray attended the open house at the new plant early last November and also visited with another of our classmates, Dr. George Thomson, who is assistant director of the laboratories, heading the

chemical activities. Founded in 1942 by three M.I.T. graduate students, including Walter, the new organization was based on an engineering approach to design and use of textile fibers, yarns, and fabrics to combine craftsmanship with modern science. Now principally active as an independent laboratory and consultant for other firms in the plastics, leather, and paper industries, the laboratories have also engaged in research for the Armed Forces towards shrapnel-resistant clothing, aircraft landing-brake parachutes and tentage that resists fire, weather, and rot. Walt is treasurer and director of F.R.L. Eggs Olcott of the Bell Laboratories is a member of the Institute of Radio Engineers technical committee on the functional representation of control, computing and switching equipment. Cac Clarke serves on the technical committee on solid state devices.

Stewart P. Coleman has been elected a vice-president of the Standard Oil Company of New Jersey. A native of Texas who received his master's degree with us and then went on to get his doctorate, he has been a director of the Esso organization since 1946. A graduate of Rice, he was originally associated with Humble Oil and Refining at the Baytown, Texas, laboratories. In 1925, he was given charge of Humble's research and development program and for eight years handled crude oil production methods as well as technical refinery services. In 1933, he became coordinator of manufacturing for New Jersey Standard Oil and two years later, manager of the economics department. On return to the company in 1945, after service in Washington with the Petroleum Industry War Council and as director of the Program Division of the Petroleum Administration for War, he was named manager of the enlarged department of coordination and economics. Since 1951, he has been chairman of the company's coordination committee. He is also a director of the Arabian American Oil Company and the Trans-Arabian Pipe Line Company. His memberships include the American Chemical Society, the American Institute of Chemical Engineers, the American Association for the Advancement of Science and the American Petroleum Institute. He is the author of numerous technical papers published in oil industry periodicals and wrote a chapter of "Elements of the Petroleum Industry," published by the American Institute of Mining and Metallurgical Engineers. He and Mrs. Coleman and their two daughters make their home in Cedarhurst, N.Y.

Charles A. Williams, Vice-president, United Illuminating Company, New Haven, Conn., writes, in part: "The Sheldon House is practically in my front yard and I'm looking forward to our 35th reunion. The past five years have been most interesting. We now have five grandchildren. Our daughter, Molly, (Mrs. M. B. Baker) has two boys and a girl and lives in New Milford, Conn. Our son, Charles, Jr., who is called 'Bill,' lives in Columbus, Ohio, and has a boy and a girl. We manage to see them all about once a year. I am currently head of the United Fund of Greater New Haven, glowing with the success of our October

fund drive, which exceeded its quota. I'm slowly recovering from an operation last May for a detached retina. It should be back to normal in time for our reunion. Spent most of the summer flat on my back. See you all next June!" Thanks, Charlie, for your kind words of appreciation. George Gokey, Jr., President and Treasurer of Gokey Properties, Incorporated, Jamestown, N.Y., writes that he toured Europe last spring and that he completed a swimming pool at his home last fall. He is planning to attend our 35th reunion. Thanks for your note, George. Joe Kaufman is reported to have disposed of his Boston radio, television, and appliance business. John J. Winn, Jr., General Manager of the Port of Portland, Ore., reports a home address at 1949 S.W. Edgewood Road, Portland. David O. Woodbury, writer par excellence and president of Creative Research, Incorporated, has moved from La Canada to his new home at 1101 Roble Lane, Santa Barbara, Calif. New addresses have also been received for Dana A. Barnes and Charles A. Hill, Jr.

Harold Holden Lockey, veteran of World War I, died at his home in Milford, Mass., on May 24, 1955. Born in Milford on May 15, 1898, he prepared for Technology at Milford High School, attending Worcester Polytechnic Institute before joining the Class in the junior year and graduating with us in Course XV. He was a member of the Congregational Church and belonged to Phi Gamma Delta at the Institute. He was engaged as an industrial engineer and had been assistant to the general manager of the Rising Paper Company, Housatonic, Mass. He is survived by his wife, Mrs. Ruth Lilley Lockey; his mother, Mrs. Marion C. Lockey; a son, Robert E. Lockey; two daughters, Mrs. David F. Kerr of Saxonville, Mass., and Mrs. Leo D'Arcangelo of Milford, Mass., and five grandchildren, to whom sincerest sympathy is extended on behalf of the entire Class.

We also wish to express to the family of Frederick S. Britton '20 and to the Class of 1920 our deepest sympathy on the untimely death of the popular star of so many Tech Shows of yesteryear.

Reminder: Make your plans now to be with the Class in Pine Orchard, Conn., next June 8, 9 and 10 and in Cambridge on June 11. — CAROLE A. CLARKE, Secretary, Federal Telephone and Radio Company, 100 Kingsland Road, Clifton, N.J.

• 1922 •

With our 35th Reunion only fifteen months away, President Rundlett and the Reunion Committee send greetings and express the hope that all members of the class who can possibly do so will plan to attend. We know we can count on those who have been in regular attendance in past years but we would like to urge other classmates, who perhaps have never attended a five year Reunion, to come to the 35th. If you wait until the 40th it may be too late.

As you are well aware from the communications received to date, the Reunion Committee, headed by Parke Appel in Boston and Dale Spoor in New York, is hard at work laying plans for elder statesmen to enjoy themselves in June 1957.

Oscar Horovitz continues as a power in the photographic world. He was one of the featured speakers, along with Dr. Edgerton and Dr. Land (Polaroid), at the annual convention of The Photographic Society of America, in Boston, last fall, talking on the subject of "Maintaining Interest in Motion Pictures."

Rear Admiral Lloyd Harrison, U.S.N., retired, has been appointed vice-president in charge of procurement of McDonnell Aircraft Corporation and is now on the job.

Othneil G. Williams was one of the leaders in getting Winsted, Conn., back on its feet after the devastating floods of last August. Quoting from the New York *Herald-Tribune*, "A pale green clock, half full of water, ticks away lustily in the office of Othneil G. Williams. 'Darnedest thing you ever saw,' grins Mr. Williams. 'We pulled that alarm clock out of the flood and it keeps time perfectly.' The man and the clock symbolize the recovery of this town of 11,000 which was flattened by the flooding nightmares of two weeks ago. Mr. Williams, a fifty-four-year-old graduate of Massachusetts Institute of Technology, with a flair for bright striped ties, is President of William L. Gilbert Clock Corporation, one of the world's biggest makers of alarm clocks. He also is the busy chairman of Winsted's Emergency Business and Industrial Committee. Gilbert normally employs 400 workers and turns out products ranging from timers for parking meters to electronic parts for military use. 'We started back in production Monday with a few more than 100 employees,' Mr. Williams said. 'We will keep adding workers steadily. There's a brisk fall business ahead.'"

Reginald W. Edmonds, raw materials consultant to the Atomic Energy Commission, died last August in Hanover, N.H., at the age of 60. He is survived by his wife, two sons and two daughters.

Roy W. Ewertz of Washington, D.C., died October 19, 1955, and Dale L. Maffitt, General Manager of the Des Moines Water Works, died October 25, 1955. Our sympathy is extended to the families of these departed classmates.

Your secretary regretfully reports, with tongue in cheek, that further misfortune has overtaken him in that he is now in partnership with two Harvard men instead of just one, both being graduates of the Harvard Law School and the younger one, Robert B. Russell, a graduate of Harvard College as well. We are bearing up under the strain, however.

Class news has been very sketchy over the last few months. Send in any odds and ends that come to mind. Incidentally, that reminds me that Ros Sherbrooke's son was a member of the crew of the *Carina* which won the Transatlantic race last June and half a dozen other important victories in European waters. — C. YARDLEY CHITTICK, Secretary, 41 Tremont Street, Boston, Mass. WHITWORTH FERGUSON, Assistant Secretary, 333 Ellicott Street, Buffalo, N.Y.

• 1923 •

President Jack Zimmerman had a beautiful idea early in the fall to send you all Christmas greetings in the form

of the unfinished report of the 30th Reunion, but it was impossible to develop the material in time. Therefore, we take this opportunity to send you belated greetings and best wishes. May the New Year bring you all the good things you so richly deserve, and may you be prosperous in all your undertakings.

The Salt Lake City *Tribune* under date of November 17 carried the announcement that Norman L. Weiss (III), milling engineer at the American Smelting and Refining Company plant in that city, has been elected Chairman of the Minerals Beneficiation Division for 1956 and ex-officio director of the American Institute of Mining and Metallurgical Engineers. A note from Norman reports that Mary and he spent last spring in Europe attending the International as an American Institute of Mining and Metallurgical Engineers' representative. He then spent the following two weeks in the Ruhr Valley, visiting manufacturers of ore-milling machinery. Nice going, fellow!

Lowell L. Holmes (XV), Executive Director of Management Research Associates at Indianapolis, was the subject of a considerable write-up in the Indianapolis *Star*, October 30. Lowell is the author of "Creative Personnel Practice," and claims, "If you're in a bad rut on your job, there's a way out." He doesn't recommend the "shotgun" method, but suggests developing a new objective, particularly a goal which is within reach and higher than your former target. He also suggests trying to get a job done in 45 minutes rather than in an hour. Well, here goes. If you notice these notes are abbreviated, you'll understand the reason.

The New York *Times* on October 29 carried the sad news of the passing of Harold H. Niles (XV) of Armonk, N.Y. While at the Institute he played on the Varsity Hockey Team. Ten years ago he was one of the co-founders of the Consulting Firm of H. H. and Philip C. Niles of Grand Central Terminal Building, New York City. The Class sends its sympathy to his family. A note from Mrs. Eleanor Carswell tells of the passing of her husband, Robert M. Carswell (VI), Colonel, U.S.A. retired, at Eustis, Fla., on September 28. We were particularly sorry inasmuch as Eleanor was one of the first group of Technology 'Dames' back in 1923.

Phil Coleman (XV) is trying to avoid your Secretary — every time the latter goes to Chicago, Phil leaves the city. We can't understand it because we really owe him a dinner. Anybody know the whereabouts of our former Class President, one Robert P. Shaw?

Do you notice all of the conspicuous places the members of our Class are occupying in various Institute affairs? Bond, Burchard, Ferguson, Frank, Ringuist, Stratton and many others; it sure feels great to be able to say, "I knew them when I was back at Tech." Congratulations! May they all go on to greater heights and glory (and they are all good-looking, too!) — HOWARD F. RUSSELL, Secretary, Improved Risk Mutual, 15 No. Broadway, White Plains, N.Y. WENTWORTH T. HOWLAND, Assistant Secretary, 1771 Washington Street, Auburndale 66, Mass.

Let's start off the year with a bit of nostalgia. What were you doing 35 years ago at this time? It's a cinch not all of you were at M.I.T. A headline in *The Tech* in January 1921 says "Second Term Finds 165 Men Missing." Nip Marsh was not of that number, for another item stated "L. P. Marsh Chosen to Head Yearling Mermen." Neither was Mart Buerger. As the frosh mermen were "sunk by Huntington" he took our only first place in the dives. Martin lasted a bit longer than that, in fact he's never left M.I.T. He's now Chairman of the Faculty. At an Alumni meeting in Walker that January it was announced that the Institute was one of fifteen colleges looking hopefully for a president. It was also announced that Herbert Hoover was not interested in the job. Seems he had other things in mind. If you were one of the 165 you may have found some comfort in Dean Talbot's admission that the "present method of eliminating students is unsatisfactory, since many men who receive Vote Ten later prove to be better in the world of commerce than those who successfully pass the examinations." We can point to living proofs of this statement.

So much for the past. Now let's take a look at the present. We have a new V.P. for one thing. Paul Cardinal has taken over for the New York area, the job that Wink Quarles did so long and so well. Paul, we may be sure, will keep things popping. Ever with an eye for business, Paul has started working on our president to have him add vitamins to his Canada Dry line. Now that every distiller is coming out with bottles to be used for candlesticks, lamps and bowling pins, that seems like the logical next step. Can't you see those 2-page full-color spreads? "NOW, Johnnie Walker with Vitamin B-1. Every drink 'To Your Health'." When you read those ads don't forget, you saw it first in these columns. At our 35th we'll be well fortified.

A letter from Francis V. Rosseau in the Round Robin series is on General Mills letterhead. Frenchy, ex-Naval Architect, joined them after his return from the wars. He's working on the technical aspects of their international operations which means, among other things, a bit of travelling. He has just returned from Venezuela, Colombia, and Peru. That new directory of ours should be very helpful to him. A very touching letter was received from Mrs. Charles H. Leonard. Her husband, a Course X graduate who was originally in '23, was a handle manufacturer in Oregon for twenty years. His health finally broke and he is now in a Nursing Home. The business which he built up is now being operated by Mrs. Leonard and their son. This in a letter so as not to "leave an unexplained break in your chain." Again it is with sorrow that we report the loss of another classmate. Phil Doane, with New York Edison for the past 25 years, died on the 27th of September. We have no details.

One rather radical change of address, but sort of an occupational hazard with the military has been received. Rear Admiral John H. Carson has been transferred from San Francisco to the American Em-

bassy in Oslo, Norway. By a very round-about route we learn that George Tapley managed to find himself in this country long enough to put in an appearance at his daughter's wedding in Boston's famed King's Chapel on November 26. You have heard often of two of our classmates in Mexico City, Clarence Cornish and Jack Nevin. Maybe you didn't realize, however, what a concentration we have there. Others are Paco de la Macorra, Gus Valdes, Rutilio Torres and Bill Lamm. Bill, who has had a varied career, is now in business with his brother, engineering and selling sprinkler irrigation systems. There's a product Mexico can really use.

The annual Directory of Alumni Association officers has just appeared. A quick rundown shows a considerable number of us, as always, active in Institute and Association affairs. Not long ago we gave you a lineup of Educational Councilors. Here are the others. On the National Nominating Committee for up-coming Association officers is David J. Sullivan. The Alumni Council numbers G. Raymond Lehrer, Avery A. Ashdown, Henry B. Kane, George W. Knight and Herbert R. Stewart among its members. The Association has a number of standing committees. Carl F. Muckenhoupt is on the Friends of the M.I.T. Library committee; Avery A. Ashdown that on Historical Collections; G. Raymond Lehrer chairmans the one with the longest name, the Committee for Nominations for Alumni Council of Representatives of M.I.T. Clubs. Let's see, that's CFNFA-COROMITC. The military could no doubt make something fancy out of that lineup, but it's a bit beyond your secretary.

Several of us have gotten into Club activities. Max Ilfeld is V.P. of the Albuquerque Club, although he'll have to work by remote control this winter. The Ilfelds are not going to Europe as planned. They've taken a house in Acapulco. In Baltimore, Clinton B. Conway heads the local group, as does George J. Fertig in Birmingham. Calvin F. Reed had hardly settled down in Buenos Aires before he was grabbed for a vice-presidency. In Cleveland we've sort of taken over, with William H. Robinson, Jr. in the president's chair and S. Floyd Stewart his right hand man as Executive V.P. Los Angeles has finally run out of '24 men. For the first time in many years there's not a one on their list of officers. Don't think they've retired completely, however. The big M.I.T. Regional Conference to be held there on March 17 is being chairmanned by ex-pres. William H. MacCallum. In New Hampshire, Blaylock Atherton is both secretary and treasurer and in Milwaukee Emerson J. Van Patten is this year's president. New York City, our biggest club by far, also has more V.P.'s than anyone else. H. D. Kinsey is one.

Guess that about does it unless we can stretch a point and count in Mrs. Harold L. Hazen by association. She's president of the Women's Association but since she is an Alumna in her own right ('28) maybe that won't do. However, that's a pretty sizeable group, and when you add to these 17 the names of 13 men who serve as Educational Councilors, it seems as

though the Class of 1924 is doing its full share; which, of course, is to be expected. — HENRY B. KANE, Secretary, Room 1-272, M.I.T., Cambridge 39, Mass.

• 1925 •

Our classmates are quite active without a doubt, but most of them seem to be afflicted with extreme modesty, so the secretary has to scratch awfully hard to find out what they are doing.

We are well represented on the Alumni Council this year. Henry McKenna has been made an Associate Member, while Fred Greer, Ave Stanton and your secretary carry over from our previous assignments. This gives us a fine opportunity to have a small class meeting once a month.

Ed Kussmaul promises that the Reunion Report will be in your hands shortly after you receive your copy of *The Review*.

Some of you who represented the Class of 1925 in a losing cause as members of the "Tug-of-War" back in the dim, dark ages may be interested to know that Ed Kussmaul ran into Arthur W. Davenport, '23, our coach, on a recent trip to Virginia. Arthur is General Superintendent of Construction for Stone and Webster and covers about 1,000 miles a week overseeing the operations of the Virginia Electric Light and Power Company.

Ave Stanton tells me that Walter Westland appeared on a panel discussing diesel engines at the Lake Placid Club in Upper New York State rather recently. This was in connection with a meeting of the New England Water Works Association. It is of interest to note that the sons of some of our classmates are coming back to the Institute; Don Vaughan's son, Don, and Tom Tuttle's son, David, entered with this year's Freshman class.

It is with sorrow that the death of Charles A. Giblin, on October 17, 1955, must be reported. Charles was a loyal member of the class and a regular attendant at reunions, his last appearance with the Class having been at the 30th Reunion last June. — F. L. FOSTER, Secretary, Room 5-105 M.I.T., Cambridge, Mass.

• 1926 •

It's wonderful! Three days ago we were wondering where the Class notes would come from this month since we scraped the bottom of the barrel last time. Then out of the blue a letter arrived from Alaska, then one from Mexico, and upon sorting out some magazines at Pigeon Cove we found an envelope of clippings underneath some issues of *Fortune*. Lady Luck still stays with us. From Alaska came a note from J. H. White who apparently reads the Class notes since he used the address we use there. Upon digging out the '26 *Technique* we find his picture and we recall that he had red hair as an undergraduate but since he was Course IV we did not see much of him. Joe White is now working for Morrison-Knudsen Company, Incorporated contractors and engineers of Boise, Idaho who have a contract in Alaska. Joe's address is Pouch 7, Anchorage, Alaska.

From Alaska to Mexico is quite a jump but that plutocrat classmate of ours from Denver is back there for the winter. In

some unexplainable manner Ben Howe has managed to figure out how to do while he is still working (???), what most of us aspire to upon retirement. I'll let you read his revolting letter. "Dear George: Could I have The Review sent here until April 5th? We plan to stay here until then — same place as last winter. Arrived here Nov. 20th. Just beat a storm out of Colorado. Towed a 16-foot boat and now have had some good fishing here. Rum has gone up to \$1.00 per quart, but I got a good haircut yesterday for 3 pesos (24¢). Flowers are in bloom here and I saw five flamingos yesterday at a lagoon but I didn't have my camera. Will watch for them manana. Hope to have a few pictures of this place to show you at our 30th reunion. We are planning the same trip 40 miles north on the coast next month. The red snappers and snook fish are big there. It's near Barre de Navidad. We caught seven big barracuda yesterday eve — 26 inches to 44 inches long. They are good eating and real vicious fighters. I'm watching the wild canaries on the flowers and papaya trees while writing this. We should have our reunion here. Very best regards, Ben. V. Howe."

In the envelope of clippings there was an interesting one about Samuel W. J. Welch from whom we have heard nothing in a long time. The clipping brings us up to date on him so we will quote it in its entirety. "Samuel W. J. Welch, former administrative officer at the naval ordnance laboratory, Corona, Calif., has taken over duties as the new executive officer of the National Bureau of Standards laboratories at Boulder, Colo. Welch was dean of students at the University of North Carolina until the outbreak of World War II. He served in the Navy during the war and in 1946 joined the Bureau of Standards as administrative officer of the Central Radio Propagation Laboratory. He held that post until 1951 when he was assigned to Corona." Best of luck in your new capacity "S.W.J."!

Another clipping tells about some of Bob Dawes activities. The clipping from the Worcester, Mass. *Independent* was motivated by Bob's resignation as chairman of the Hudson town finance committee on which he had served for 20 years. The clipping also tells of Bob's business activities which include the presidency of Thomas Taylor and Sons Incorporated and vice-president of the New England Tape Company. Bob has been one of Hudson's leading citizens and businessmen for a great many years. Phil Mancini of Providence, R. I. has a new job. For many years Phil has headed the Dept. of Public Works in Rhode Island and now he has become chief of the traffic engineering and highway division in the same department at his own request. The article explains that the new job pays more money and has tenure while the job with the more impressive title was an appointment, which sounds like a very smart move for Phil. While we still have a few clippings left, it's a very comfortable feeling to have them on hand and this looks like an excellent time to sign off.

Every once in a while we find out in an indirect way that the class is reading these notes such as the letter referred to

above by Joe White. Do you recall that in the November issue I mentioned being cracked up in my Star boat last summer by the brother-in-law of a '26 man but I mentioned no names. I didn't need to for I found out a few days after publication that the unnamed '26 man had needed said brother-in-law and you should have seen the long letter of explanation he received. If you read the notes and do not want to write us about yourself why not send us a note about some other classmate you have heard about recently. — GEORGE WARREN SMITH, *Secretary*, E. I. Du Pont de Nemours and Company, Incorporated, Elastomers Div., 140 Federal St., Boston 10, Mass.

• 1928 •

With deep regret we record the death of Samuel Crawford Robinson, an electrical engineering major in our Class who was a graduate student at the time we were seniors. Although his death occurred January 25, 1955, the news has only now come to our attention.

On a recent visit to Newark, Ohio, your assistant secretary had the pleasure of meeting again with Jack Grant. Jack is with the Owens-Corning Fiberglas Corporation at Newark and has been with this company for nineteen years. He carries on a number of staff functions which are closely associated with the creative efforts of the company's technical groups. Among his many activities are the operation of a technical information service, a library system, and patent liaison office. All of these aid the research and production units of one of the nation's most progressive manufacturing firms.

The Grants have two sons, both of whom are married. No grandchildren yet! John A. Grant, Jr. finished four years of service in the Marines including service in Korea. He held the rank of technical sergeant. At present he is rounding out his education at Ohio State U. where he is a junior majoring in aeronautical engineering.

The younger son, David C. H. Grant, has done his schooling first. He is about to receive his degree from Ohio State U. in mechanical engineering (December, 1955). David won the Distinguished Student Award at O. S. U. and as a result expects to receive a commission in the regular Air Force. This will be followed with about three years of service.

John, Sr. graduated in Course V and has been in the glass business during all twenty-seven years since. Before going to work for Fiberglas Corporation he was ten years with the Corning Glass Works, Corning, New York. We are pleased to report that his health has been good and that he still has the appearance and manner of a very young and energetic twenty-eightier! — GEORGE I. CHATFIELD, *Secretary*, 49 Eton Road, Larchmont, New York. WALTER J. SMITH, *Assistant Secretary*, 15 Acorn Park, Cambridge, Mass.

• 1930 •

From A. Sol Uman comes word that he has moved to a new home in Freeport, New York where he has boating and swimming in his own back yard. He is still president of the Uman Construction Corporation, engineers and builders,

which is helping to build up Nassau County with factories, office buildings, shipping centers, etc. He was recently elected president of the Nassau County Chapter of N. Y. State Society of Professional Engineers. His older boy, Henry, is now a Junior at M.I.T., taking Building Construction. Stephen, his younger boy, is a sophomore at Freeport High School. He mentioned that he and his wife (Simmons'30) had a wonderful time at the 25th Reunion of our Class.

From William C. Dickerman, Jr. in Paris comes word that he is there for a year as technical advisor to the new French general manager of his company. The language is a problem to him in that his French, though adequate for general conversation, is strained with the technical. He says Paris is expensive, worse even than N. Y. but it is gay and entertaining when there is time. He will be back in December of '56.

George B. Thorp is at present a lecturer in mechanics in the Department of Mathematics at Carnegie Institute of Technology and resides at the Faculty Club there.

Joseph R. Stevens has been nominated by the Alumni Association, formally elected at the October 3rd meeting of the Corporation, for the position of Alumni Member on the M.I.T. Corporation Visiting Committee for the Department of Chemistry. The Corporation's Visiting Committees are composed of nine members: three members of the M.I.T. Corporation, three non-M.I.T. members chosen by the President, and three M.I.T. Alumni members recommended by the Alumni Association with the endorsement of the head of the department. The purpose of the Committee is to give the department the benefit of advice and opinions of an interested group other than those actually connected with the M.I.T. Faculty or Administration.

It is with great regret that we learned in November of the death of Robert K. Phelan, President of Taconic Farms, Incorporated, Germantown, N. Y. He was a bacteriologist and chemist. Taconic Farms, Incorporated is a company which breeds mice for laboratory purposes. Bob began the breeding of mice as a hobby before establishing it as a business in 1952. After graduating from M.I.T., he worked for a gelatine manufacturing concern in Woburn, Mass. and then went to Borneo for the American Chicle Company. Later he was director of research for the Beechnut Packing Company. News of his death will come as a shock to those of us who saw him at our 25th Reunion last June, which he attended with Mrs. Phelan.

As you probably know, the Class news for The Review must be prepared and entered two months previous to the monthly issue. I am writing in December for the February 1956 issue and take this opportunity to wish you all a prosperous and happy new year.

The following changes in address have been received: Dr. John G. Cecil, 901 Pennsylvania, Coeur d'Alene, Idaho; Major General Charles K. Galey, Jr., Chief of Civil Affairs and Military Gov't, Room 2B-272, Pentagon Bldg., Washington 25, D. C.; Arthur G. Gautreau, 39

Newhall St., Lynn, Mass.; David Giller, 19 Regent Circle, Brookline 46, Mass.; Bryant F. Kenney, Lawrence Farms Co., Chappaqua, N. Y.; Warren H. Martell, 90 Pinckney St., Boston 14, Mass.; John J. Scheuren, Jr., 342 Jerusalem Rd., Cohasset, Mass.; Norman J. Smith, Box 16, Bustelton Pike, Churchville, Penna. — **GEORGE P. WADSWORTH, Secretary**, Room 2-287, Department of Mathematics, M.I.T., Cambridge 39, Mass.

• 1932 •

Tom Sears has given me a very enthusiastic report on the Alumni Officers Conference, which was held in September at Baker House. About 350 Alumni came in from all over the country to learn more about the present activities of the Institute. Tom says that even with his geographical proximity to the Institute, he had no idea of the great progress being made there. There were a number of our classmates at this meeting and I quote Tom as follows: "Al Dietz of the Institute Staff was on the Committee and the list of Registrants shows Al Daunis as being there representing the Providence Alumni Club. Unfortunately, I did not have a chance to see Al at any of the meetings nor did I have a chance to speak to Gaynor Langsdorf, who is an honorary secretary from San Francisco whom I understand is enroute to Arabia with one of the oil companies. However, I did have a great chat with Ken Klopp who is president of the White Pine Sash Company, Spokane, Washington. Ken looked much the same as he did in school and he tells me that he is doing quite a bit of traveling and that their business is exceptionally good. I understand that he has been very active in raising money in the Spokane area for scholarships. Ken Lucas, who is vice-president of the Minneapolis Gas Company, was also at the meeting as was Dr. Ike Schwartz. Ike is a pediatrician in New Bedford, Massachusetts and with the severe polio epidemic which we have had here in Massachusetts he has been quite busy. Ike, you will recall, is the Chairman of our Reunion Fishing Committee and he is looking forward to doing the same job in 1957. John F. Longley, who lives in Albany and works for the New York Telephone Company, formerly in our Class but now listed as 1933, was also there and I had a nice chat with him. From a Class point of view I was very much interested in the meeting for Class Agents and Class Officers at which the entire discussion concerned the Alumni Fund. I found this meeting particularly instructive and after I have had a chance to see Joe Welch I will write to you and John Lawrence more fully."

Don Severance reports that Frank Merrill has been elected an Alumni Member of the M.I.T. Corporation Visiting Committee for the Department of Civil and Sanitary Engineering; and Horace Byers for the Department of Meteorology.

Charlie Bradley is still Section Chief for Johns-Manville Research Center, Manville, New Jersey. He writes: "Let's get behind the U.M.T., the United Nations, less atomic secrecy, better care for the mentally ill, more support for independent educational institutions."

And from Swanton D. Dalton, who has

just moved to New Canaan, Conn., 24 Gower Road: "It has been a long time. After living in Summit, New Jersey for 11 years we have just moved to a new home in Conn. Just in time for the floods! No damage but much inconvenience. Had the pleasure in '53 of renewing acquaintance with Boston and a bit of Tech when I attended the 29th AMP at Harvard Business School. Who would have thought that an engineer would end up there." Swanton is Assistant General Manager of Manufacturing for Socony Mobiloil.

Isabel Ebel is aero-engineer at the U. S. Naval Air Missile Test Center, Point Mugo, California. Her address is P. O. Box 775, Camarillo, Calif.

Johnny Finnerty gives a boost for the Reunion and really asks for it when he writes: "Plan to attend and anxious to cooperate locally. Will arrange golf, tennis, lodging or baby sitters for our out of town classmates." John's address is 67 Old Colony Road, Wellesley Hills 82, Mass.

George Hoadley, who was with us as a graduate student, reports from Raleigh, North Carolina, where he is head of the department of electrical engineering at North Carolina State College: "Three boys in our family. Pete the oldest is a junior civil engineer at Duke University, is married with a daughter. Bob is working in Raleigh and Bruce the youngest is a basketball star on the Raleigh High basketball team. State College is a grand place, with 2500 engineering students, 600 of whom are in EE."

Allan Dunning, Captain, USN, who had been Commander of the Philadelphia Naval Shipyard, retired the first of December. He will take up some kind of civilian activity, so we will be hearing from him again.

George Goodman, President of Nettie Greene, Incorporated, writes that he is operating two stores (lingerie, underwear, house coats, etc.) in association with his wife. One is located at 1251 Center Street, Newton Center, Mass. and the other at Belmont Center, Mass.

A news release from Libbey-Owens-Ford Glass Company, Toledo, Ohio, announces that Russell W. Abbott, former Chief Structural Engineer and with L.O.F. since 1941, has been named Associate Director of Engineering.

Sidney Caldwell is planning engineer for Portland General Electric Company, Portland, Oregon. Alexander Burr is director of research, North Dakota Research Foundation, Consultant in Fuel Technology, U. S. Bureau of Mines, and Professor of Chemical Engineering Research at University of North Dakota. Philip Allen is Assistant Plant Manager for Avon Products, Incorporated, Suffern, N. Y. Bertil Franson is Superintendent of Standard Duplicating Machine Corporation. His address is 36 Crest Road, Lynnfield Center, Mass. John Cogan is head of the technical department, Bayonne Refinery, Esso Standard Oil Company and lives at 8 Arden Place, Summit, N. J. Robert W. West is cartographer for the Army Map Service in Washington, D. C. — **ROBERT B. SEMPLE, Secretary**, Box 111, Wyandotte, Mich. *Assistant Secretaries:* **WILLIAM H. BARKER**, 45 Meredith Drive, Cranston, R. I., **ROLF ELIASSEN**, Room 1-138, M.I.T., Cambridge 39, Mass.

• 1934 •

Dave Mooney has had notable successes with his two textbooks, which carry the titles "Mechanical Engineering Thermodynamics" and "Introduction to Thermodynamics and Heat Transfer." His publisher is pleased to report that the former of these is in use at no less than 43 colleges. Dave is highly qualified to be an author in this area, having worked before the war at General Electric, served as a battleship engineering officer during the war, and from 1946 to 1952 been on the M.I.T. Mechanical Engineering faculty. He is now with Jackson and Moreland.

Henry Mazer is acting chief inspector of the Boston Health Department. One of his duties is the inspection of the 350,000 quarts of milk which come to Boston daily. He supervises the work of inspectors who are stationed at milk receiving stations throughout New England.

W. T. Reiss is now in Albany as an architect with the New York State Education Department, Division of Buildings and Grounds. Proctor Wetherill advises that he is raising Christmas trees in Phoenixville, Pennsylvania.

The 1934 Compton scholarship fund is well launched as this is written. Some seventy classmates are seeing four others each in behalf of the fund. A steering committee of twenty swells the total of those involved to 370. If any classmate who reads this is not plugged in on this project, a note to the undersigned will quickly bring the opportunity to learn about it and to participate. — **WALTER MCKAY, Secretary**, Room 33-213, M.I.T., Cambridge, Mass.

• 1935 •

My apologies for missing the January issue but it is difficult to think of new year's resolutions before Nov. 15. At least two of our members are reading the notes as I received a call from Arthur Cohen, Boston Architect, and a letter from Arthur I. Zich, 12 Glastonbury Oval, Waban 68, Mass. He tells me that John Ballard, Paul Daley, and Arthur King all received a prize for traveling the farthest distance to our reunion. Leo Beckwith, President of Market Forge Company, 25 Garvey St., Everett, Mass., made this possible with the donation of three identical gifts — Thanks, Leo.

Your Class officers held another meeting on Dec. 9, and the committees for the 25-Year Gift and 25-Year Reunion were officially appointed by President Colby and are as follows: General Chairman — Richard Del'Etoile, Delbrook Ventilating Company, 65 Landsdowne St., Cambridge, Mass.; Special Gifts — William Abramowitz, American Resinous Chemicals Corporation, 103 Foster St., Peabody, Mass.; Class Agent — Henry F. King, Socony Vacuum Oil Company, Incorporated, 648 Beacon Street, Boston; Treasurer — Ernest Van Ham, Jerguson Gage and Valve Company, 391 Broadway, Somerville, Mass.; Field Agents — Walter Stockmayer, M.I.T.; Promotion — F. W. Muldowney, Jr., 1109 Boylston St., Chestnut Hill 67, Mass.; General Committee — John H. Colby, Randolph Antonsen, Arthur Cohen, Leo Beckwith, Robert

Forster, Beverly Dudley. After consideration of your committee on the basis of advice from President Killian and the Alumni Association, it was decided that the 25-Year Gift should be for a form of scholarship and shall be known as "The Class of 1935 Scholarship Fund." Contributions to the fund have been received as a result of pledges made at the Reunion. Pledge cards will be sent to all members of the class soon. Let's get behind the drive now. Watch for an issue of The 1935 *Tech* which will be coming your way soon.

Col. William F. Powers, U. S. Army Corps of Engineers is now Chief of the Operations Division, Civil Works. One of the projects under his supervision is the U. S. portion of the St. Lawrence Seaway. Col. Powers took his M.S. at M.I.T. in 1935.

William R. Weems (Bill) obtained his M.S. degree with our Class. He has been at M.I.T. with the Department of Aeronautical Engineering and then with the Industrial Liaison Office. He is a native of Korea and a year ago was sent to Korea to work with the University of Minnesota on a program of rebuilding the engineering schools of that country. His address is c/o UNC Economic Coordinator, APO 301, San Francisco, Calif. — FRANCIS W. MULDOWNEY, JR., *Secretary*, 1109 Boylston Street, Chestnut Hill 67, Mass.

• 1936 •

In response to the call of Tony Hittl, Reunion Chairman, the "enthusiastic beavers" group of Reunion Committee-men met at the M.I.T. Club, New York in November and December.

So far, everyone present indicated that most of the people they had talked to were interested and looking forward to being present. This was particularly true of those who were on hand for the 1951 Reunion which everyone agreed had been particularly successful. In addition, the opinion was rendered by legal counsel present that each participant, especially those in consulting work, would get sufficient benefit out of the group meeting in the way of new technical and business ideas, as well as new contacts, that it would justify being a business trip.

In view of the fact that a great deal of interesting and questionable activity had taken place since 1951, it was expected that a number of members would appear on hand solely to defend themselves against the remarks that might be made about them by other members who were sure to attend.

In order to get additional publicity started and under way, it was determined that Course Reunion Committee Chairmen should be appointed for each course, one such chairman for each of the smaller courses and several chairmen for some of the larger courses. Accordingly, the group present accepted assignments to write to various Class members whom they knew to get the course chairman appointed. These chairmen could then carry on in spreading the word amongst their friends. While some of the course chairmen were obvious possibilities, (Course II — Chester Meyer, Course III — Wally Mathesius, Course V — Frank Parker, Course VI — Bill Fingerle, Martin Gilman, Henry

Johnson, George Temple, Course XVI — Dorie Shainin), the others were to be selected and made part of an official list at a later meeting.

At this point, Mal Holcombe made a joyful report that a number of people had already signed up and sent in their \$10 registration fees, raising the Class funds to an astronomical figure of \$500. Mal pointed out, however, that those who did not send in their registration fees as soon as they could would have the dubious privilege of sleeping on the beach, the local hostelry, or the Weekapaug Inn lawn. Everyone was accordingly admonished to see that at least their friends got their registration fees in — and let the others take care of themselves! Mal, however, said he would issue handsome numbered certificates, *personally* signed by himself as Reunion Treasurer (Marshall M. Holcombe, Aircraft Marine Products, Incorporated, 2100 Paxton Street, Harrisburg, Penna.).

Harry Essley, XV, reported on his work as head of the Process Engineering Department of the Naval Ordnance Department of Eastman Kodak Company in Rochester, N. Y. Harry says that an issue of *Life Magazine* of several years ago describes the department's classified (i.e. confidential) work so well that there was nothing he could add — except to say that work covering plant layout and manufacturing problems was designed to make the work more "economical" — an almost unheard of situation for government contract work!

Word comes that Webster H. Wilson, XV (in what is termed a "high" personnel change) has been moved from assistant vice-president to vice-president in charge of the Government and Commercial Department of Hazeltine Electronics Corporation at Little Neck, New York (outside New York City).

Albert C. Schaeffer, XVIII (Mathematics), Professor at the University of Wisconsin, Madison, Wis., has been nominated by the Alumni Association — formally elected at the October 3rd meeting of the Corporation — for the position of Alumni Member on the M.I.T. Corporation Visiting Committee for the Department of Mathematics.

The Corporation's Visiting Committees are composed of nine members: three members of the M.I.T. Corporation, three non-M.I.T. members chosen by the President, and three M.I.T. Alumni members recommended by the Alumni Association with the endorsement of the head of the department.

Ordinarily the committees meet once a year on a date convenient to the members, frequently at the end of the calendar year or early in June. The purpose of the committee is to give the individual departments the benefit of advice and opinions of an interested group other than those actually connected with the M.I.T. Faculty or Administration.

Brent Lowe tells of his work in business investments in California. After moving from Salt Lake City to La Jolla a few years ago he has gone into the work of promoting the buying and selling of small businesses — shades of Course XV! In the past few years he has promoted and sold cement block plants, dress shops, furniture

shops, machine shops, and breweries. If any of the Class are interested in buying into sport fishing boats for \$15,000-\$20,000 with a return of \$5,000 a year, boat landings at \$40,000 returning \$12,000 a year, or self-service laundries, hardware stores or other such allied lines, Brent is ready to analyze and suggest. He and his wife Cork, his daughter Ming, ten, and son Brenton, four, are enjoying life in their new redwood ranch-type house within walking distance of the fancy La Jolla Beach and Tennis Club. Brent assures any classmate coming to see him in La Jolla that he will convert a pleasant vacation into a worthwhile business trip! As Brent says: "Why live anywhere else, if you can live here?" If nothing else, his descriptions of investments in Lisbon Uranium (20¢ to \$3.00 a share) and White Horse Canyon Mining Company (now \$1.00 a share) are worth listening to. In any event, anyone with two new Pontiacs, one a special pink to match his wife's sweater, is doing all right!

News comes to us of the untimely death of two classmates: John Fisher, June 1955; Grafton Perkins, November 1955. John was a graduate of Course XII (Geology) and had worked for some time as product engineer with the Tulsa, Okla. division of the Gulf Oil Company and lived at Sapulpa, Okla. Grafton, a graduate of Course XV, was president of the Erie Bottling Corporation, Erie, Penna. Most of the Class will remember both John and Grafton well.

Besides making plans for the 1956 Reunion, the "rump" session elected Vince Estabrook, Waban, Mass. as Class Agent.

Harry Hazelton reports himself on deck as sales manager for Imperial Knife Associated Companies, Incorporated. Since returning briefly to Lambert Chemical Company, St. Louis, after the war, Harry has been in Chicago and the midwest before coming back here a few years ago to take on his present job.

Before closing, sad news comes that John Merrill and his wife were killed in the United Airlines plane that crashed in Wyoming in October. John came from Cumberland, Me. and attended Greely Institute and Bowdoin College before getting his master's degree in physics at M.I.T. In 1951 he was named vice-president for operations, of Sylvania Electric Products Company, Towanda, Penna. — HENRY F. LIPPITT, 2ND, *Secretary*, 30 Rockefeller Plaza, New York, N. Y.

• 1938 •

This business of being class secretary is one of feast or famine just like a few other activities I could mention. With a little help from our Alumni Association Secretary I have more material than the editor would care to see in one month. I should like first to quote a few cards we have received.

Bernie Lement: "I am still on the D.I.C. research staff, Department of Metallurgy, here at M.I.T. I have been residing in Newtonville for the past one and one-half years. The main news is the birth of Lucy Ellen, now three months old. Since my elder daughter, Janet Louise, is only 2 yrs 7 months, the average age of my children may be the lowest of the entire '38 class."

Frank Gardner: "My four boys, their mother, and I spent July at Wellfleet, Cape Cod. We look forward to the same again next year and hope it might allow connections with other '38ers. We saw Edith Gillis (Jim's widow) and their five fine children at Cotuit. Her mail address is P.O. Box 148." (Jim's friends please note. Dave)

Bob Flanagan: "I am working in the Research and Development Division, Office Chief of Ordnance, Washington, D.C."

Al Wilson: "As for news — Dad died in September which has required changes in the administration of the company and I have taken his place as president and treasurer of the A. O. Wilson Structural Company. As for the family — things continue to go well as Dave Acker knows — we see him regularly in Lexington."

Jack Rugo: "I'm still working with my father in the building construction business. Bumped into Sam Rudginsky, top man of the Utilities Engineering Company at the bid-opening of his job. Unfortunately, I came in third on that one. Hope to be able to work one out with him sometime."

Tom Garber: "Last May I left M.I.T. where I had been associated with the Dynamic Analysis and Control Laboratory the past seven or so years, to join Control Components Company of Brookline, Mass., an engineering organization devoted to the development and manufacture of electromechanical devices for instruments and control. I find that being directly involved in administration and engineering is extremely stimulating and am enjoying the new arrangement."

Jack Wilber: "Nothing unusually exciting happening to me. Am now comfortably settled in a new house for us and three children. Oldest boy graduates from high school in two years! Doubt that he will go to M.I.T. He leans more to business rather than engineering aptitudes. I am taking a course of SAI in Norton's now (Sales Analysis Institute) — human relations."

Howard Lawrence: "Since I enjoy reading about progress of other class members, I guess it is only fair that I take time out and write myself! I am still with RCA in Camden, and Morristown, N.J., having been here since graduation. I am manager of the airborne fire control engineering section, an activity of some 300 people, 60 per cent of them graduate engineers. Family consists of two boys, eight and thirteen, (both active in Boy Scouts and Cub Scouts, sailing and many other things), so that my wife and I have a tough time keeping up with them!"

Bruce Leslie: "I have recently been appointed assistant secretary in charge of underwriting of Firemen's Mutual Insurance Company, Providence, R.I., one of the Factory Mutual Fire Insurance Groups — plenty of headaches and also most interesting work as most of our customers are major industrials. Have joined the ranks of the sailors by purchasing a Wood Pussy to use on nearby Narragansett Bay with the three boys. Had hoped to attend the Alumni Officers Conference, but was detained."

Bill Roper: "Following a series of assignments on construction work in the

field (Nebraska City, Denver, and Labrador) I was brought back to Washington in the summer of '53 and, for a time, commuted on the Paris-Heidelberg-Tokyo circuit in connection with our construction activities in those areas. I was promoted to Colonel in July of this year and am presently assigned as executive officer, military construction, in the Office of the Chief of Engineers.

"My family (wife and son, age 16) and I are living in Arlington, Va., and would be very pleased to see any members of the class who happen to visit this area.

"Perhaps, with luck, we'll even get a chance to attend Alumni day next June. I've been out of the country for the last three years."

Edith Steere (for Sam): "Sam left last week for Tyndall A.F.B., Fla. to take a 15-week advanced course in fighter-interceptors F-86D). From there he goes to Truax A.F.B. in Madison, Wisc. to take command of the 325th F.I. Sq. This is quite a change, and one he likes; from Research and Development to Air Defense Command.

"Betsy, Pete and I will join him when we have sold the Baltimore house."

Ed True: "Its been so long since I've done anything of note that I can't remember when any news of me last appeared. Still Associate Professor of architecture at Harvard University Graduate School of Design in charge of structural and mechanical equipment design courses.

"I have a private practice as consulting engineer doing structural design for several large projects in collaboration with local architects. I am also a consultant on several public works projects.

"I still live in Concord, with wife Mildred (M.I.T. '42) and four boys, ages 12, 10, 5, and 3. Active in civic affairs as Chairman of Planning Board and on other committees such as school sites selection and building code committee. I resigned as Building Inspector of Concord last January. It was too much work."

We also have a few letters; Bill Whitmore writes: "Having long ignored your pleas, I suppose I should overwhelm you with a letter rather than a postcard. First of all, I'm still married to Elizabeth S. (Bibba) Arnold. We have three boys: Charles 7, Edward 5, Thomas 3, and are anticipating a fourth arrival in about two weeks. I'm working for M.I.T. as a member of the Operations Evaluation Group of the Navy — currently on a one-year loan to the Weapons System Evaluation Group, which has just come under M.I.T. sponsorship. For the last five years or so, I've been concerned with the Navy's guided missile program, under the title of OEG's Scientific Analyst to the ACNO for Guided Missiles. This was interrupted for six months in the summer of 1953, when I went to Korea for the closing months of the war as Scientific Analyst to CG, First Marine Aircraft Wing. My present assignment is concerned with a project to formulate research and development requirements for limited warfare.

"I can offer comments on three classmates: Russ Coile is currently representing OEG in the Far East (Yokosuka, Japan) at ComNavFe. Warren Thomson is working for Assistant Secretary of De-

fense (Research and Development) here in the Pentagon, and has a side interest in my current activities. Ned Bossange is married to my wife's sister, Evy, and is still working for Pan American in San Francisco. I had a brief visit with him a year ago last April. I understand he participated in the San Francisco-Honolulu yacht race last summer.

"Bibba, who got a Ph.D. in Mathematics from California a year after I got mine, is working as an analyst for the National Security Agency. In addition to the children and a competent day-time maid, we are supporting two cats and three cars: a 1930 Franklin sedan, a 1948 MG TC, and a 1955 Alvis convertible.

"Outside of occasional book reviews for the Journal of the Operations Research Society of America, my various writings over the past ten years have all been classified, so I can't offer a bibliography.

"Having said this much, I shall probably lapse into silence for another ten years."

Frank Atwater says: "I should first tell you that lack of news — not indifference — has been responsible for my long silence. However, this time I do have a couple of items that might be of interest.

"First, to review a bit, the Atwaters still are located in New Britain; have three children, two girls and a boy, and I continue to serve as Fafnir Bearing's assistant general works manager. Two books on Industrial Management (McGraw-Hill) on which I collaborated continue to be well received and, in fact, one of them is now going into its third revision.

"What's new is that I recently returned from a very interesting trip to England as a member of a delegation which studied ways of expanding the sale of Fafnir products in the sterling area. It was a most illuminating experience studying British business conditions, financial problems, and manufacturing arrangements.

"Also, after serving for the past year on the Water commission of the City of New Britain, I have recently been appointed chairman of that board. So what with vocation, avocations, and family I don't find myself these days with much unoccupied time."

I shall close with excerpts from a letter from Herb Wiley, and shall leave the rest of my material for seed: "I've been away more than I've been home these past six months. Hope my schedule next year won't be quite so strenuous. Since I've seen you last a lot of water has gone under the bridge business-wise. My old company sold out and merged with H. K. Porter of Pittsburgh, Penna. When the dust finally settled I found myself a sales manager instead of a factory manager, hence all the traveling." — DAVID E. ACKER, Secretary, Arthur D. Little, Inc., 30 Memorial Drive, Cambridge, Mass.

• 1940 •

This month, your secretary received a letter from Marsh McCuen, a substantial part of which is quoted below: "Dear Al: Where do you get that 'Esq.' business after my name. You should have signed your letter 'Al, Esq.', so that I would know that you don't just apply it to country bumpkins like me. Seriously, though,

it hardly seems like two months ago that you wrote me. So much waters have flowed under — since. I attended the Alumni Officers Conference, got a new job in another city and state and have become a bachelor (figuratively speaking, of course, as my wife and four boys are still back in the unsold home in Lansing. I left Olds but not G.M. I now draw my checks from the Allison Division of G.M. in Indianapolis, who, you may have heard, make gas turbine engines for aircraft. They call me the production engineer for the advance design and development section of the engineering department and I am liking the job very much. Now, as to the Alumni Officers Conference, the Conference itself was wonderful, but I did not see nearly as many of our classmates as I had hoped to. My wife and I drove down by way of Pittsburgh and Wilmington and made our first classmate contact in West Hartford. First I tried to see Don Ross but he was on a business trip to Buffalo. However, his very lovely and charming wife Charl entertained us for a couple hours. We then drove to the other side of town and dropped in on Lew Beers. Just the day before, Lew had moved his three children and great dane dog into an enormous mansion. Needless to say that they were not quite settled so we had a very enjoyable time warming up the place. Lew hadn't changed a bit! You may remember Lew and M.I.T. parted company at the end of his junior year. He had to settle for graduating cum laude from Amherst! Now he is a big insurance executive. — At the Conference, I saw a few more.

"I talked at some length with Phil Stoddard several times. He has a very interesting job with M.I.T. as head of the Industrial Liaison office. I saw Jim Baird at the big dinner Friday night, but only got to say hello. Had a most interesting talk with Paul Keitel. He told me that he was in the midst of negotiating his first labor contract at Barratt Division of Allied Chemical in Toledo. At the dinner, Friday, and also at President Killian's reception before I talked with Oliva Fulton. Seems he was quite interested in talking with General Motors! The commuter's life is rough on the family life! I was also told that Ray Ledrer, John Danforth, Dick Berry, and Bob Bittenbender were there but the crowd was so big I missed them. I felt sure I would see them at the Faculty Club after the big dinner, but no luck. The conference itself was very worthwhile and will help my work on the Educational Council. M.I.T. is certainly pushing onward and upward to greater heights.

"I almost forgot something really important. Saturday after leaving Tech, I stopped to visit Fred Grant '39 in Wellesley. While there, who should drop in but Don Ross and Charl. Seems they came up to see the Red Sox play and it was the first time he had been to Boston in years. Same old Don and a complete insurance executive, yet didn't know M.I.T. had a course in insurance. — Marshall McCuen, Esq. (I nearly forgot)."

Good luck Marsh in your new job. Fred Hammesfahr has recently joined Pittsburgh Consolidation Coal Company of Pittsburgh, Penna. as assistant vice-

president in charge of development. Until such time Fred was manager of process development in G.E.'s chemical development department and prior to that was a development engineer with General Tire and Rubber Company. At last accounts, Fred had signed a temporary lease on a house in the Pittsburgh area, after he had previously thought that he had bought a house in Mt. Lebanon, but while he was reading the fine print in the contract, the house was sold from under him leaving him high and dry. Something easy to do in the very hilly Pittsburgh neighborhood. Your secretary saw Rudy Altrogen while waiting for a bus in Washington the other day. Rudy was with us for three years as a chemical engineer before switching to the Fletcher School of Law and Diplomacy and he is now, as is fitting to his change in interests, working for the State Department. — ALVIN GUTTAC, *Secretary*, Cushman, Darby and Cushman, Washington 5, D.C.; MARSHALL MCCUEN, *Assistant Secretary*, 4968 West 14th Street Indianapolis, Indiana, SAMUEL A. GOLDBLITH, *Assistant Secretary*, Rm. 16-325, M.I.T., Cambridge 39, Mass.

• 1941 •

Reservations for the 15th Reunion are now arriving in very encouraging numbers; if you haven't signed up as yet, do it now, and take advantage of the lower cost (the registration fee goes up after February). The committee is hard at work on arrangements, and a grand weekend is assured. Let's get those reservations in today!

Appointments of note include those of Bob Sinsheimer to Alumni Member on the Corporation Visiting Committee for the Department of Biology, and of Arthur Gingrande to major in the Air Force Reserve.

On the podium have been Ralph Swann, assistant director for research and rockets in the missile laboratories at Redstone Arsenal, who spoke at groundbreaking ceremonies for the new Science Hall at Athens College, Athens, Alabama; John Biggs, Associate Professor of Civil Engineering at M.I.T., who gave one of the advanced structural lectures of the Boston Society of Civil Engineers; and Harry Wasserman, Assistant Professor of Chemistry at Yale, who addressed the New Haven section of the American Chemical Society. — IVOR W. COLLINS, *Secretary*, 28 Sherman Road, Wakefield, Mass.

• 1943 •

In October Miss Nancy Koutsotaseos became the bride of classmate Kome Nickole in Boston. She is a graduate of Nashua Business College and the Leland Powers School; Kome is with Nickole Sales and Service, Incorporated of Saugus, Mass. Bill Verrochi has moved to his new home in Norwood, Mass., at 79 Fisher Street. He recently joined Allstate Engineers, in Boston, a consulting firm which does special project work for engineering departments which don't have capacity enough to do their own.

Warren Foster, who joined the Cornwall and Patterson Company in October, 1953, is now vice-president of that firm. Warren was in the Navy after graduation,

and was with Foster and Brown, stock brokers, from 1946 to 1947. During the five years before joining Cornwall, Warren was assistant to the executive vice-president of Hazeltine Electronics Company. Cornwall and Patterson, located in Bridgeport, Conn., make piano and action hardware, screw machine products and wire specialties. Thomas E. Peacock, Jr. became manager of market research at the Exide Industrial Division of The Electric Storage Battery Company in November. He lives in Jenkintown, Penna., with his wife, son and two daughters.

Phil Mork wrote that he was married in April, 1948 to the former Wilma M. Roser in Cincinnati, Ohio; that they have three children: Philip A., five, Peter J., three, and Alison J., who is only one and one-half; they live at 50 Nevada Rd., Needham, Mass.; and Phil has his own consulting business in Newton.

We regret to announce the untimely death of Lt. Donald G. Jackson, who was killed in an accident in Maryland on October 6, 1955. He had lived in Warrington, Fla. for the past few years, and was a member of the course of mechanical engineering with our Class.

The recent President's Report reminded me of a very important matter which I think many of us are likely to forget, and I don't mean Class or Alumni dues. Dr. Killian requested Alumni to seek out and encourage likely M.I.T. candidates, for the very simple reason that the men make the school, and we have to work to get the best men. Many young fellows are discouraged because of the financial aspect of an M.I.T. education, and go elsewhere because of the low cost attractions. I think that if you will just pass the word around that our scholarship funds are readily tapped, and that loans are available, it will help a lot. — RICHARD M. FEINGOLD, *Secretary*, 49 Pearl Street, Hartford 3, Conn.

• 1947 •

My job has been eased considerably this month by a delightfully long letter from Henry Lee in California, so without extending the introduction any further, here it is: "Have just waded through a stack of Technology Reviews, and thought I'd give you a run-down on the Class of '47 as it looks from Los Angeles. Personally, to cover nine years quickly — I spent a year in Germany after graduation, loafing, studying physics, and getting married to a charming young girl I met in Bayreuth (the Richard Wagner Stadt). Ria's an East Prussian though, by birth and education. We now have two children, aged six and three. My trip to Germany was followed by a stint in New York City with Union Carbide and Carbon Corporation, before I got a call to the West. Here I joined the Aerophysics Department of North American Aviation, where I ended up as a research specialist (turbo-pumps) and engineering supervisor in the Liquid Propellant Rocket Engine Department.

"But with my bachelor's thesis and stint in Carbide both in the plastics field to taint me, and a Doctorate in Physical Chemistry from Commonwealth University with a plastics thesis also, I left the moonship business and joined the Epoxy-

lite Corporation (TEC by coincidence), where I am technical director and executive vice-president. We specialize in encapsulating materials for large electric motors. Bob Sandman, '48, of Sandman Electric in Boston is our representative in New England. So life is uneventful now. We're trying to build a first-class laboratory, and to bring about some needed improvements in the service, life and reliability of power equipment. Don't expect to run out of problems for some time to come. Have published about 15 articles since finishing up with my *Tech Engineering News* duties. However, I had a big thrill when my first science fiction story was published last spring ('Forced Move,' IF, June 1955).

"We get to see John Maxfield occasionally. He has his Ph.D. in math (University of Oregon), and is married (two children) to a charming female Ph.D. mathematician. They both work at NOTS, Inyokern, as does Ralph (still a bachelor) Selfridge. He also has his Ph.D. in math from the University of Oregon. Ralph and John are both active in I.B.M. work, and have Rolls Royce parts strewn around the landscape as usual as they try to find time to rebuild three of them. Ralph has his pilot's license, and flies a lot too. Virginia (Ginger) Tower is married to erstwhile M.I.T. math instructor, Larry Norwood. Both are working at Hughes Aircraft, Culver City, where he's a big wheel in personnel, and she's a radar antenna specialist. Vic Mayer joined them a few months ago after a stint in Arizona designing polarization equipment for prospecting. Mike Oglo, who's added a Doctorate in Law to his Course XV degree, is with a law firm in Bakersfield. Keep up the good work."

Also in a writing mood this past fall was Gabe Isakson from whose letter I have extracted the following excerpts: "As you may have heard via the grapevine, I was offered and accepted an associate professorship at the University of Michigan. We left Hartford on August 23, and moved in here in early September. We were lucky to find a University rental, which is a good deal in many respects, except that there is heavy traffic and little outdoor space for the children to play. It's within a few minutes walk to the office. So far we like the town very much. There is much more to do here than we have time for. This semester I am teaching a course in rotary wing aircraft and later will teach the latter half of the course in flight mechanics, my part to consist mainly of introductory aeroelasticity. In addition, I have a structures lab section one afternoon a week. Having to organize the material as I go along is turning out to be a lot of work. The first year will be rough, but I think it should be smooth sailing after that. If you ever take a trip in this direction, why not stop over here for a week-end. We would love to see you again and Gordon and Peter would give you a good workout."

Another note comes from Simner Long. He writes: "I will be sailing my 53-foot yawl, 'Ondine,' in and around Gotland and Fastnet races, and will be away six weeks. (This was in July.) You undoubtedly heard that I was married to Jane Bagley last October 25 (1954) in Paris."

No other news by personal contact this month. My work has kept me too close to the office, and I haven't been getting around to meet people too much. So, for the rest of it, I shall quote from the news clippings and company releases. Hobart Swan has been appointed staff purchasing agent with the Scott Paper Company in Chester, Penna. Jerry Cox, who has been specializing in acoustics since graduation, has accepted an appointment as assistant professor in the department of electrical engineering at Washington University, St. Louis, Mo. He is also engaging in research and consulting at the Central Institute for the Deaf in St. Louis. Formerly assistant chief engineer with CGS Laboratories, Incorporated, of Stamford, Conn., Bill Smith-Vaniz has been named vice-president of the firm. Bill was largely responsible for the development of the first all-electronic computer that converts International Morse Code signals from a radio receiver into suitable electric pulses for a standard teleprinter, producing a printed message exactly as transmitted at the point of origin.

John Wentworth has passed through the training course in the Foreign Service Institute in Washington, D. C. He is married, and the father of a daughter, Carolyn. Ed Eaton, who is head of the radiochemistry staff of Arthur D. Little, Incorporated, was a U. S. delegate to the Atoms for Peace Conference held in Geneva, Switzerland. Last fall he addressed the League of Women Voters of Hingham on his experiences at Geneva. Cmdr. Kenneth Tebo has been transferred from the U. S. Navy Research and Development in Washington to the Naval Air Station at Quonset Point, R. I., where he now commands a Navy Air Squadron. One of the leaders in the Red Feather drive in Weymouth was Allyn Lumbert, who was in charge of public relations for the campaign. Allyn is a research engineer with Nuclear Metals, Incorporated, of Cambridge, of which company Ed Eaton is a director, by the way. One of our Alumnae, Natalie Hoyt, is the new director of the development program at Smith College. Miss Hoyt holds the rank of Commander in the Naval Reserve.

DeWalt Incorporated of Lancaster, Penna., has announced the appointment of Ed Forth as vice-president in charge of manufacturing. Ed was formerly general superintendent of the company, which is a subsidiary of American Machine and Foundry Company, where he had previously served as quality control manager of the Buffalo Division. The promotion of Barry Brown to department head, Fine Chemicals, Niagara Falls Plant, is announced by the Hooker Electrochemical Company. Barry has been with the firm since graduation, is married and has a son. Cornell University has appointed Enslie Oglesby, who heads his own architectural firm in Dallas, Texas, as a visiting critic in the University's College of Architecture this academic year. Enslie has studied both at Cornell and the Royal Academy of Fine Arts in Sweden. Currently attending a ten-month course at the Army War College, Carlisle Barracks, Penna., is Col. Harry Woodbury. The college is the Army's highest institute of learning.

We shall close this month with two birth announcements. The first is from Bob and Jen Warner telling of the arrival of daughter, Katharyn Wilson on September 14 in Palo Alto, Calif. The second comes from Hugh and Lorrie Flomenhoft whose first son (second child), Gary Morris, was born September 26 in Massapequa Park, L.I., N.Y.—CLAUDE W. BRENNER, *Secretary*, 1470 Beacon Street, Brookline 46, Mass.

• 1948 •

During the past month a letter from Norm Kreisman reported the unhappy news that Harvey Salwen passed away on November 5. About two years ago it was learned that Harvey had an incurable kidney disease, but nobody thought it would become fatal so soon. He had been in the hospital twice this year.

Changing rapidly to the other side of the ledger, we have received word during the past month of two marriages in the '48 "family." Tom Lacy was wed to Miss Sally Ann Martyn of Aurora, Ohio. Tom is currently a Lieutenant in the Army Reserve; and in August, Dick Barbera was married to Mary Ellen Campos. Like the Lacys, they will make their home in Boston.

A letter received from our Class Agent, Ken Brock, reads in part as follows: "I have now become located in Bachelor's Quarters in a Beacon Hill Apartment (18 Pinckney Street) with disadvantages and advantages. Bill Katz and Jim Adelstein live down the street so we've rendezvoused for a party or two and Ben Bretler lives not far away, too, with his lovely wife and baby. Haven't seen as much of them as I'd like, but there does seem to be a pretty substantial nucleus of '48 left in this area."

From Obie Dension, Secretary, Class of 1911, came a picture of Dick Harris with a newspaper article describing his recruiting activities for the United Church Canvass in Worcester, Mass. For a hobby, you will recall, Dick works at the Norton Company.

And then we have the press releases which the Alumni Association sends to us monthly to supplement the somewhat tarnished efforts of the "faithful." We quote: "W. A. Lockwood has been selected to fill the position of Senior Economist Analyst at Coral Gables for the International Petroleum Company. Prior to this assignment, he was an Economics Analyst in the manufacturing department of Esso Standard Oil Company in New York. After his graduation from M.I.T. in 1948, he joined the Esso Standard Oil Company at its Baton Rouge Refinery where he served as Equipment Inspection Engineer. After serving in various assignments at Baton Rouge, he transferred early in 1954 to Esso's New York Office."

"Pfc. Joseph V. Yance is presently a Data Analyst with Detachment Board No. 3, Headquarters, Continental Army Command, Fort Benning, Georgia." Joe entered the army last January and completed his basic training at Fort Dix, New Jersey. After graduation in '48 from M.I.T., he went on to receive his doctorate from Harvard in 1955.

"Dr. Harold H. Kelley will become As-

sociate Professor of Psychology and will join the Senior Staff of the Laboratory for Research in Social Relations at the University of Minnesota. He got his Ph.D. in '48 and goes to Minnesota from Yale."

"Allan A. Eaton has joined the C. A. Batson Company of Brockton, Mass., as assistant to the president. His primary responsibility will be estimating and field supervising. For the past seven years Mr. Eaton has been employed by the Gilbane Building Company in Providence, R. I., where he last held the position of Chief Estimator in the office, although he spent most of the time in the field."

"Appointment of Captain Robert S. Day, Chemical Engineer at the Rocky Mountain Arsenal as new registrar of the U. S. Military Academy at West Point, was announced in September. A 1944 graduate of West Point, Day holds a master's degree from M.I.T. He previously served a tour of duty as instructor and assistant professor of physics and chemistry at West Point. A World War II veteran, he served in the European Theater with the 1280th Engineer Combat Battalion."

"Edward Gardner has been appointed assistant professor of electrical engineering at Lehigh University in Bethlehem, Penna. Prior to coming to Lehigh, he was an assistant professor at the United States Naval Academy and also has taught at Virginia Polytechnic Institute, the University of Minnesota and M.I.T. After graduation from M.I.T. with a bachelor of science degree in 1948, he received his M.A. at the University of Minnesota and his Ph.D. at Catholic University."

"Another new faculty appointment has been announced by the University of Pittsburgh. Samuel Hanna has been appointed instructor in mathematics. He has taught at Stone Hill College and served as a mathematician at M.I.T."

There will be more news next month, but only if you provide it. — WILLIAM R. ZIMMERMAN, *Secretary*, Moraine Paper Co. Div., West Carrollton, Ohio. RICHARD H. HARRIS, *Assistant Secretary*, 14 South Street, Grafton, Mass.

• 1951 •

Greetings to you all for the good year 1956. Your secretary is tired but happy after wading through all the nice notes and letters received during the course of our work for the fabulous Reunion for '51. The work involved caused a miss in the last Technology Review issue, so if you will bear with me I would like to share quite a few news items with you. First, let me say a few words about the wonderful response it has been my pleasure to receive in the Class treasury area. As you know your secretary-treasurer did not have a healthy Class treasury. But we have received over 225 contributions so the books are solvent again. A complete report covering income and expenditures will be forthcoming to you via the Class News column amidst the Reunion mailing. I would like to say that a small portion will be used to defray operating expenses, a large portion will be used to cover reunion mailing and news to the Class, a share will be allocated for handling Class elections, and a small fund will be set aside to defray Class expenses

for the next five years and to start the ball rolling for our second fifth year reunion: five and one-half years hence. As your secretary stated earlier, dollars and cents figures will probably reach you faster via the Class mailings. Another word of appreciation — your notes and comments symbolizing the intangible link between you and M.I.T. in particular and also with our Class of 1951 are reward and incentive to me to work harder on this side of the typewriter. Thank you, men and women of '51.

Ed Huckle has been at University of Michigan as an assistant professor of metallurgy since September. Dave Ragone is also there in a similar capacity. John Conley is with the Commercial Research Department of the American Brake Shoe Company in New York City. Howie Chapman is with the Clarin Manufacturing Company (Steel Folding Chairs) in Chicago. From Florida, Charlie Terrell writes that he is an assistant superintendent of a construction company — emphasizing the administrative aspects with a little less attention on engineering. Bill Pinkham is with the Trane Company in Washington, D.C. Bill Griffith devotes his talents at RCA in Lancaster, Pa. Gene Oster is finishing up work on his doctoral degree at Tech. Ron Greenwald sends us his greetings from the U. S. Naval Postgraduate School at Monterey, Calif. Norman Edelson is helping the U. S. Army out via a tour of military duty.

Lou Stern is still single and keeping busy for Capitol Engineering Company at Dillsburg, Penna. From Strong Memorial Hospital at Rochester, Clint Seeley says "hello" in a few moments stolen from his arduous routine of completing the work for an M.D. degree. Dave Schoeffel has completed his basic training at Fort Dix. Morley Kahn is stationed at Frankford Arsenal in Philly. Gene Lubarsky is connected with the Socony Mobile Oil Company at Paulsboro, N.J. Glenn Mackey is still flying with the 513 Fighter Squadron APO 198 N.Y. and is stationed in England. He feels he will be in that neck of the woods till '56. Of course, Glenn, it doesn't take long to come over in a jet. Don Friedman joined the Travelers Weather Research Center of the Travelers Insurance Company in Hartford. He has completed a year's study in statistics under a Rockefeller Foundation Fellowship at the University of Chicago. His research work dealt with the application of statistical techniques and high speed electronic computers to the prediction of expected rainfall amounts over river drainage basins, and in the fields of atmospheric turbulence and the utilization of weather data to building and residence design.

From beautiful Fairborn, Ohio, Lou Tedeschi writes to tell us he is at the Wright Air Development Center at Dayton, Ohio, performing his duties in the rotary wing section of the Aircraft Laboratory. He claims he doesn't feel away from Tech with all the Techmen there. George Shumway contributed twice his quota. He is a civilian working at the U. S. Navy Electronics Lab in San Diego. His research work covers oceanography, marine geology to be more specific — thanks for straightening me out, George.

He also finds time to do consulting work in marine geology mapping the sea floor off California for various oil companies. His firm is called: "Geological Diving Consultants."

John Lindholm, after his time with the Army, joined the International Register Company, a Chicago concern. Ken Kruger is in Europe on a traveling fellowship until April, 1956. Walt Kinzinger is doing "hush-hush" work at Philco and finds his work intellectually stimulating. Stan Jones took pen in hand and penned a few lines: "I went through flight school to become an Army aviator. We flew observation, messenger service, wire laying, and other duties in Korea. Single engine planes and helicopters comprise the machinery." Stan spent sixteen months in Korea before returning. "I ran into Bob Knopf in Japan one day when I was grounded by weather at his base. I was flying one of those hedge-hoppers from Yokohama to the Seoul area. After Korea I spent some months in Virginia (Ft. Eustis) in the Research and Development Command developing new and better tool sets for aircraft maintenance." Stan joined the Sprague and Hemwood Company at Scranton, Pa. Stan and his wife, Jackie, have a son, Kent, two years old and they were expecting another arrival from Sir Stork. Come on, Stan, what were the statistics? Boy or girl? Thanks, Stan. Tom Dell sends us some news. He is with Du Pont in Delaware (Wilmington) working as a technical service representative in the textile fibers division. Tom and Rosa Lee Brake were married in September with Bill Landenberger as best man. Tom, Sashi Saran can be reached at 6 Edmonstone Road, Allahabad, India.

John Clegg reports that his work for Hooker Electrochemical Company at Niagara Falls is keeping him quite busy. He tells us that Pete Shaffer is with Du Pont at Niagara Falls. John and John Morgenthau got together for a reunion to discuss old times and current activities. From South of the border, hard-working Marc Aelion took time out to send a letter North. Marc reports that he was elected secretary-treasurer of the M.I.T. Club of Sao Paulo. He is still with Laborterepica Company and feels the pharmaceutical field very rewarding professionally. Three other '51ers are in that area: G. L. Dutra, F. Silveira, and F. Baptista. Marc may be able to get back for the reunion in June. Here's hoping everything works out, Marc! Russ Casella was awarded one of the two fellowships established by Horizons, Incorporated, the Cleveland research organization. Dex Whittinghill keeps active in the South Jersey-Philadelphia area — doing M.I.T. Educational Counseling work and being in the M.I.T. Club of Philly (Executive Committee). He gets together quite often with Paul Grady, Walt Brill, and others at Campbell's from other classes. He is now staff manager — methods engineering at Campbell's, is pretty well settled in his new home, and has a twenty-three month son, Dex, Jr. Bill Bruce reports that life has been rather interesting. After spending twenty-one months at Wright-Patterson Air Force Base, he joined U. S. Rubber Company at Passaic, N.J., spent

two years with them, and is now in bean town (Boston — reminder is not necessary??) with the National Research Corporation. Bill and Jean find their time well taken care of by Michael — now two years old.

Thank you for staying with me so long. Remember it's not too late to make a new year's resolution to jot a line or two to your Secretary. And the Reunion should be mentioned again — even though you are hearing from the Committee quite often. Remember the missus would enjoy the trip and a slight break in the routine to refresh yourself with some of the new young old timers of Tech will be stimulating. Your Secretary had a busy week-end on December 10. He spent some time with Marv Grossman discussing Reunion affairs, held another meeting with Art Wasserman to discuss all Class affairs, and then held a long telephone meeting with Hank Spaulding on Reunion Financing. Next month — same time; same station. — STAN MARCEWICZ, *Secretary*, c/o The Lorraine, Route 2, Highland, Mass.

• 1953 •

In the past week I have received two letters from former classmates. Steve Kliment is studying for his master's degree at Princeton. Steve was discharged from the Army last summer after — to use his words — “providing me with board and lodging since 15 October 1953.” He does not say what field he plans to study in, but as I recall he received his degree from Tech in architecture and he is probably continuing in this field.

Jack Pinkovitz will be in the Navy until May of '58. You will recall that after graduating from Tech he worked as a general engineer for the Navy in Newport, R.I. After spending a year and a half with them he decided to apply for the Navy's officer candidate school. He was accepted and completed the course successfully. At present Jack is stationed in New York City. According to Jack's letter Stan Silverman is a lieutenant in the Army Security Service at Fort Devens. Stan is due for his release from active duty some time next spring.

A couple of other notes on recent marriages. James Stoddard and Miriam Louise Wood were married in October. Jim is a lieutenant in the Army at present. Miriam studied at the Museum of Fine Arts and the Massachusetts School of Art. Donald Neuhaus and Marie Therese Peverill were married in Quincy, Mass., on the 5th of November. After a trip to the Poconos, Don and Marie settled down in Westbury, N.Y. Don has a position with Hazeltine Electronics Corporation in Long Island. Marie is a graduate of the Simmons College School of Nursing. She is employed as a science teaching interne at the Massachusetts General Hospital. I hope that all of you enjoyed Christmas and had an unforgettable New Year. — VINSON W. BRONSON, *Secretary*, 18 Mellen Street, Cambridge, Mass.

• 1954 •

Art Jacob, who is at Burtonwood Air Force Base in England, writes that he had a month's leave in October and lived it up at home in New Jersey for a while.

To hear Art tell it, he has been running the show at Burtonwood since he's back there.

Bob Anslow sent a few notes from Harvard Business School. Bruce Brosler is a fellow student of Bob's there. Dave Springsteen and George Dormer are now serving with the Air Force, Bob thinks — at least, he says — they are no longer at Harvard. Larry Holmes acquired a master's degree in history at Harvard and then joined the Air Force, which seems to catch most of us sooner or later. And Pete Peterson is still with Goodyear in Akron, Bob reports. From the other end of the country comes word from Coley Bresee, who is now in Danville, Calif. Coley and his wife expect an addition to their family come April. Coley also reports that they have a “St. Bernard named Cosmo and two female cats named Dumbo and Sam.” (We give the complete story in these Notes.) Rich Wilson (Coley spelled his name with a small “w” which may or may not be significant) is somewhere in Maryland at a NIKE site. Tom Bastis and his wife of last June 17, Ruth-Alison Birch of Needham, have settled, permanently if possible, in Oakland, Calif., where Tom is with the Kaiser Aluminum Company. Emil Krecji, his wife Shirley and 10-month-old Suzanne are at Moffett Field Naval Station out in California and, much to Coley's satisfaction, are quite “satisfied with the climate here.”

From Fort McClellan, Ala., Roy Reidinger, Vice-president of the Class and happy (?) representative (lieutenant size) of Uncle Sam sends word that Harry Miliotes, Bill Willoughby and he are all in the same unit down there. Roy considers this an indication that the Army is really a small organization. I believe that a much more plausible explanation is that the Army just doesn't want to separate friends. Roy reports that Eddy Hair is also stationed at Fort McClellan, and that Scott Mudgett is aide to the commanding general at the Army Chemical Center. Felix Rapp and Don Mudgett are at Redstone Arsenal in Huntsville, Ala. Kevin Woelflein and Locke Yut are serving their time in England.

Notice arrived from Otto and Myriam Sellinger that young Victor Alejandro arrived in New Orleans on October 21, 1955. Bill Willoughby was also presented with a son and heir in October. Congratulations are in order and herewith extended.

A few other items received include: John Zubaly managed to get through the 14-week officers basic course at the Engineer School, Fort Belvoir, Va., and is now a fully qualified lieutenant. John Wells has headed overseas via the Pacific. Frank A'Hearn was finally caught by the Air Force and is now at Chanute Air Force Base in Illinois. Bob Adam is also with the government at Williams Air Force Base, Arizona. Knut Berge and his wife have moved to Oslo, Norway — drop in if you're in the area. Russ Chihoski has moved up to Tinker Air Force Base at Oklahoma City. Walt Kroy has headed west and at last breath was in Long Beach, Calif. Dick McCreanor is being paid by Jones and Laughlin Research Laboratory in Pittsburgh. I suppose that he is also working for them. Dean Jacoby

breezed through town not long ago and asked me to extend his greetings to all. Dean is still officially stationed in Tulsa, Okla., and does spend some time there. And that's about it for February. Keep the news coming in. — EDWIN G. EIGEL, JR., *Secretary*, 3654 Flora Place, St. Louis 10, Mo.

• 1955 •

By the time you read this you will have received a card from us with a reply card attached. We hope that a short note telling use where you are and what you have been doing since June 10, 1955 has been written on the card and dispatched back to us. News has really been scarce, and we rely on you to supply it. In case you aren't aware of it, receipt of the Technology Review is only through contribution to the Alumni Fund, so let's all send in a check if we haven't done so already.

Bob Craven is back in Cambridge after working for RCA in Trenton since graduation. Bob says that “It was the lure of a higher education and the ski slopes of New England” that decided him on the change. We are sort of wondering which lure comes first! Anyway, Bob is now with the Instrumentation Labs here at Tech.

Also at Instrumentation is Bob White and Doug Sullivan. Doug has recently been bitten by the skiing bug, and is making northerly excursions quite frequently.

Bob Posner has been into Boston quite a few weekends from his military home at Ft. Devens. According to the latest reports, he expects to be shipped to Germany in February. While we are on the military subject, Lieutenant Stan Levitt dropped into Boston on the way from Ft. Lee, Va., to Korea. At the time of writing Stan was complaining of being shipped out just a few days short of New Year's Eve.

Charlie Prewitt dropped into Cincinnati recently. He was working for the U. S. Geological Service, but by the time you read this he should be with Uncle Sam at Ft. Devens.

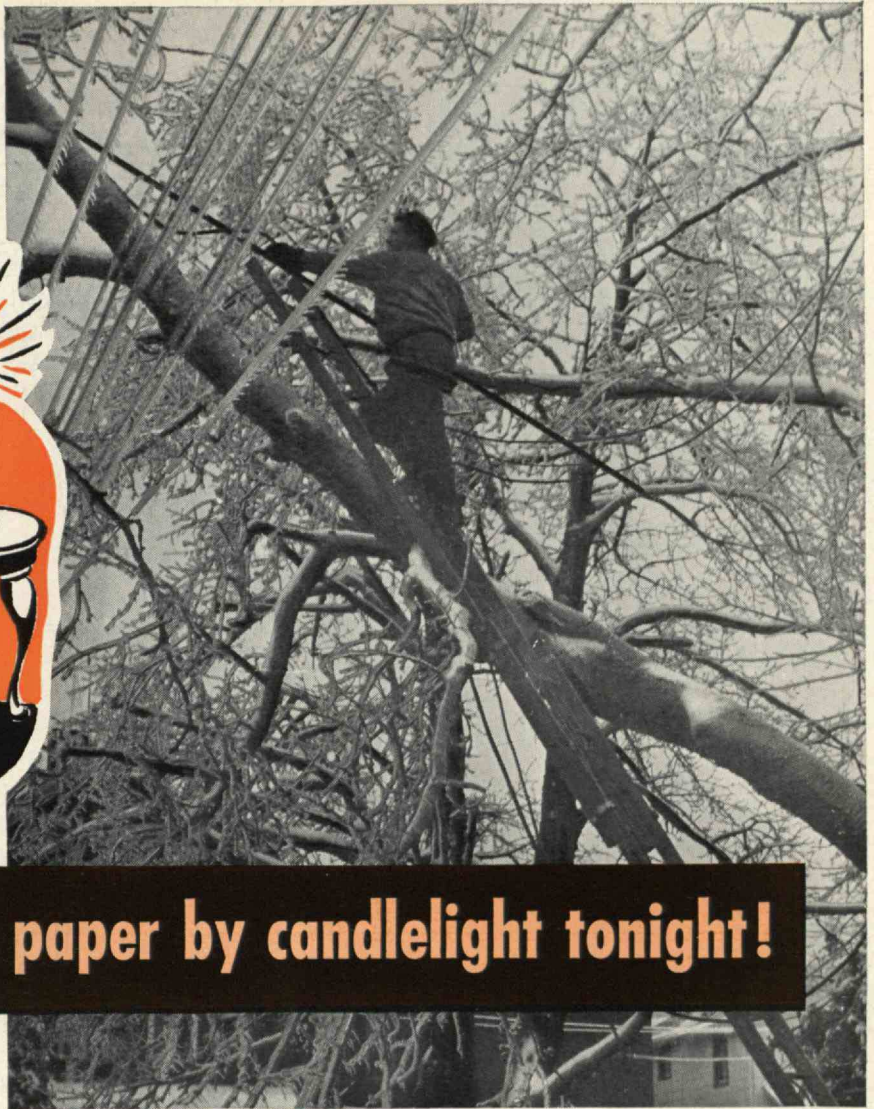
On December 18, Larry Burman and Sara Sidore were married in Manchester, N.H. Larry is in his fifth year in Course XVI, Honors Course, and Sara is attending the Rhode Island School of Design. The honeymoon took them south to Virginia, and they are now residing in Providence.

On September 16, Jane Hodgson was engaged to Jack Dennis, a research assistant in Electrical Engineering at M.I.T. Jane is now a member of the staff of the Electrical Engineering Department, as a teaching assistant.

Jerry Zindler has been up to Boston a few times recently. He is now working at Nuclear Developments Associates in White Plains, N.Y.

We are proud to announce for the first time in this column the birth of a new M.I.T. legacy to Tom and Joyce Hamilton. It's a boy! Tom is still at Tech this year going for the (S.B.)² degree, with his work in metallurgy.

How about sending those cards in to us? — DELL LANIER, *Secretary*, 3011 Vernon Place, Cincinnati, Ohio. L. DENNIS SHAPIRO, *Assistant Secretary*, Room 10-483, M.I.T., Cambridge, Mass.



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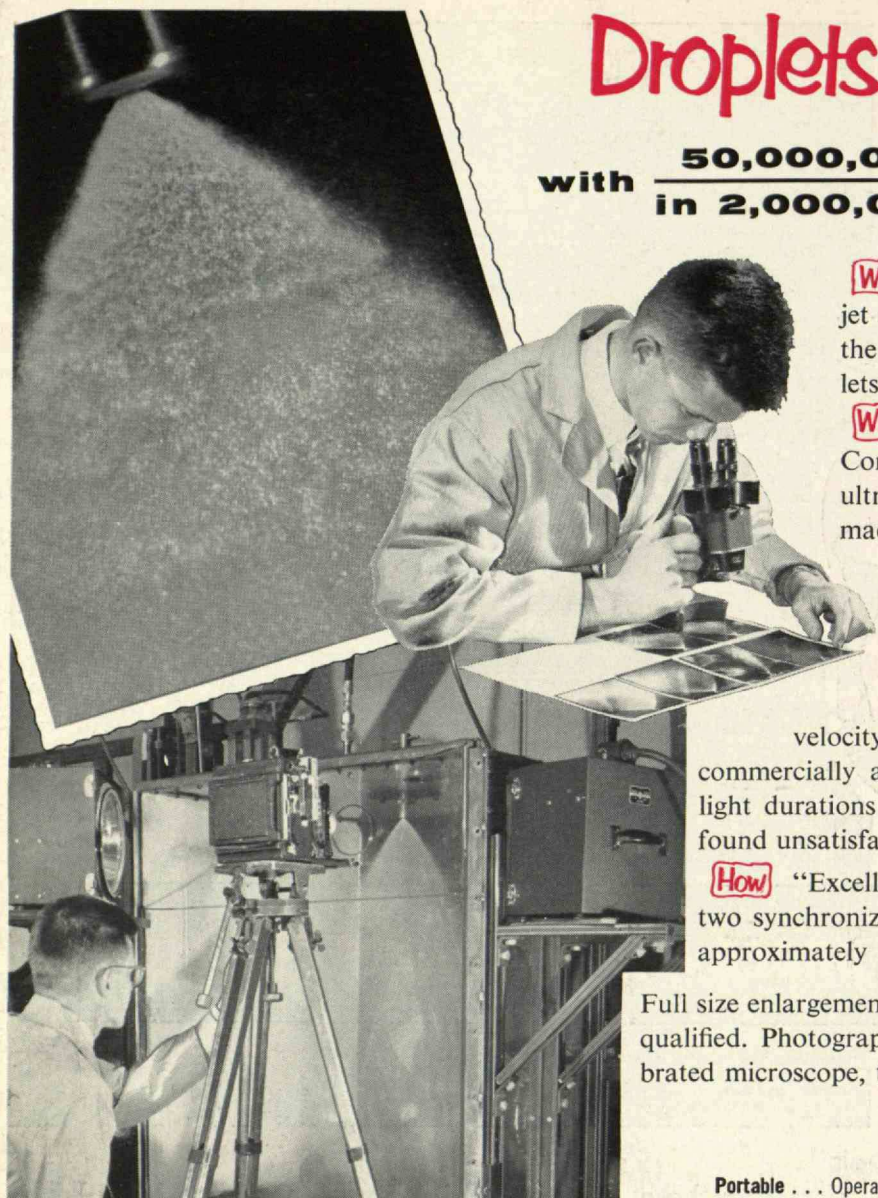
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